

IQLR

Volume 4 Issue 3
September/October
1994

International QL Report

Super Gold Card
includes:
Centronics interface
68020 processor

SMSQ
New Operating System
QDOS compatible

LINEDesign
Vector Graphics Package
version 2

"Did you hear about QL
World's demise?"
"I guess it means the
QL is dead."

"You can't be serious?"
"QL World may have
died, but the QL is not
only alive it's vibrant."

"Just look at the Starbursts,
they tell the real story."

QBOX
a worldwide network of QL
related Bulletin Boards



Graphics Card
will correct the QL's deficient
Graphics capabilities

QFAX
Shareware software allows
the use of FAX MODEMS
with the QL.

QXL
4 or 8 Meg versions
now with SBASIC

IDE Interface
allows connection of
multiple IDE Hard Drives

"Yes, The QL is Alive and Expanding"

IQLR.....

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We welcome your comments, suggestions and articles. YOU make IQLR possible. We are constantly changing and adjusting to meet your needs and requirements.

Articles submitted for publication should be on a 3.5" DD disk in Quill or Text87 format. To enhance your article (if at all possible) send Saved Screen dumps produced with the Sbytes command. Please specify where in the text you would like the screens placed.

Article and Advertising DEADLINES are as follows:

Issue 1	10 April
Issue 2	10 June
Issue 3	10 August
Issue 4	10 October
Issue 5	10 December
Issue 6	10 February

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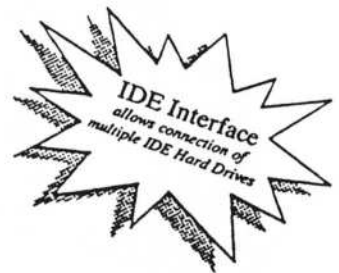
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"The Definitive Information Source"

QBIDE Hard Disk Interface

Newport, Rhode Island, USA - Editorial Staff



A QL compatible IDE hard disk interface is now a reality. Through the cooperation of Zeljko Nastasic of Croatia (designed and built the circuit board) and Ron Dunnnett of Great Britain who will market the interface.

The firmware is a rewrite of the old Rebel hard disk interface firmware masterfully done by Phil Borman of the UK. At present, a hard drive can be formatted to 128 Megs. Yes, you can use a larger or smaller drive. The release software should contain the ability to partition, this would enable you to buy, say a 400 Meg drive and partition it into four 100 Meg drives.

While this sounds economical it can have its draw backs. ALL hard disks crash at one time or another. When it happened, you'd lose all the data on the physical drive not just the data on the partition your working on. Our intention is to purchase two drives of about 100 to 200 Megs and use the second drive as our backup device. This will save us many hours backing up the system to floppy disks.

We had hoped to have a picture ready to accompany this article but found out that Bob is not a very good photographer so the drawing from the QL IDE reference manual will have to do. By the way, the "Reference Manual" is quite extensive and very good.

The interface itself is quite small (3.5" x 3.75") and has a through port so that it can be connected to an un-modified QL. Connection is to the QL's expansion port, with your memory/floppy interface being connected to the IDE interface. QBIDE IS compatible with the Gold Card and Super Gold Card.

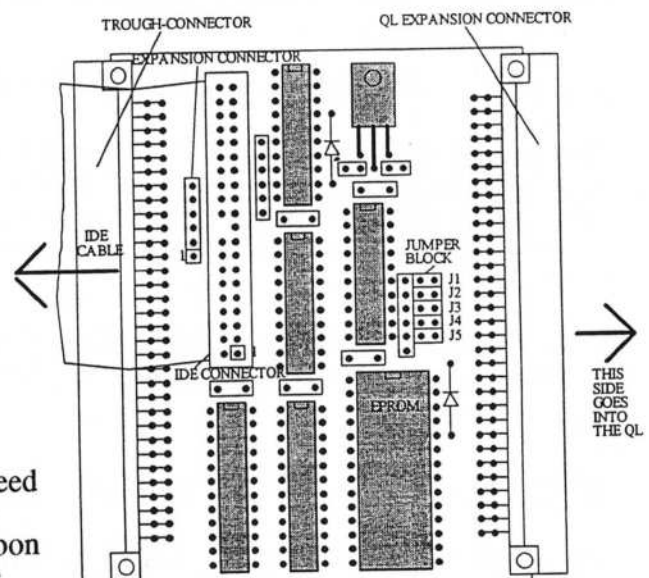
Once you've purchased QBIDE you DO NOT need an additional PC type IDE interface. Cables are simple and you can either use a standard PC ribbon cable or build your own. The cable uses 40 wire ribbon cable with two 40 pin (female) crimp on connectors.

In our next issue, we will have a review of QBIDE by Don Walterman and John Impellizzeri, who promise to put it through its paces. In the meantime, Ron Dunnnett is taking orders, the price for QBIDE is £65 plus shipping. Why not order yours today ?? Order from:

QUBBESoft P/D
38 Brunwin Road
Rayne, Braintree
Essex CM7 5BU
Great Britain

Tel: 0376 347 852

Fax: 0376 331 267





International QL News

This column is intended to bring together new and/or changing developments within the QDOS community. The information contained here has been reported by individuals and suppliers who desire to keep you informed as to their recent activities.

MIRACLE SYSTEMS LTD - Yate, Bristol, Great Britain

Miracle Systems are in the process of moving their operations back to: 20 Mow Barton - Yate, Bristol BS17 5NF, UK. Their telephone number remains the same until the move is completed. When asked about the move, Stuart stated that with the increased amount of travel required by the expansion of QL shows all over, it became necessary to be located in an area that was conducive to travel.

Another one of our 'starbursts' (see cover) is about to become reality. Stuart stated that work on the long awaited QL "GRAPHICS CARD" is nearly completed. If everything goes as planned, Stuart hopes to have it available in time for the holiday trading season.

DILWYN JONES COMPUTING - Bangor, Gwynedd, Great Britain

This most prolific of software producers has done it again with the release of "DESKJET-A5". A pointer driven program for users of the HP DeskJet family or similar printers, for producing printouts consisting of two or more standard pages per sheet in small print, e.g. for producing leaflets or booklets. Extensive use of your printers landscape fonts allows you to print in seven different layout types.

DESKJET-A5 is available on disk only and requires expanded memory due to the use of the Pointer Environment. The program costs just £12.00 from DJC or from any of their dealers worldwide.

JOCHEN MERZ SOFTWARE - Duisburg, Germany

Yet another of our 'starbursts', SMSQ the new QDOS-compatible Operating System from Tony Tebby should be available as you read this. SMSQ will work on any system which has a minimum of 1 MB of RAM and a faster processor than the QL's 68008. With SBASIC you can start as many interpreted BASICs as you want, all running independently. The Device Drivers are Level 3 which gives you flexible formats. You can access a DOS or TOS disk exactly like you access a QDOS disk.

The serial and parallel port drivers have been raised to the high standards of the ATARI drivers with more parameters. Other virtual drivers have been added or improved: named pipes (first in, first out). History (Last in, first out, new!! Even shared Histories are allowed!) As you can see, you finally get the system you've always dreamed about.

(Editor's Note: For additional information on SMSQ, please note the full page of details on page 10 of this issue. IQLR has been informed that we will receive one of the very first copies issued. Watch these pages for a full review of SMSQ in the near future. Personally I can't wait to get my hands on SMSQ. "And they said the QL was dead".)

TEAC 3.5" ED DISK DRIVES

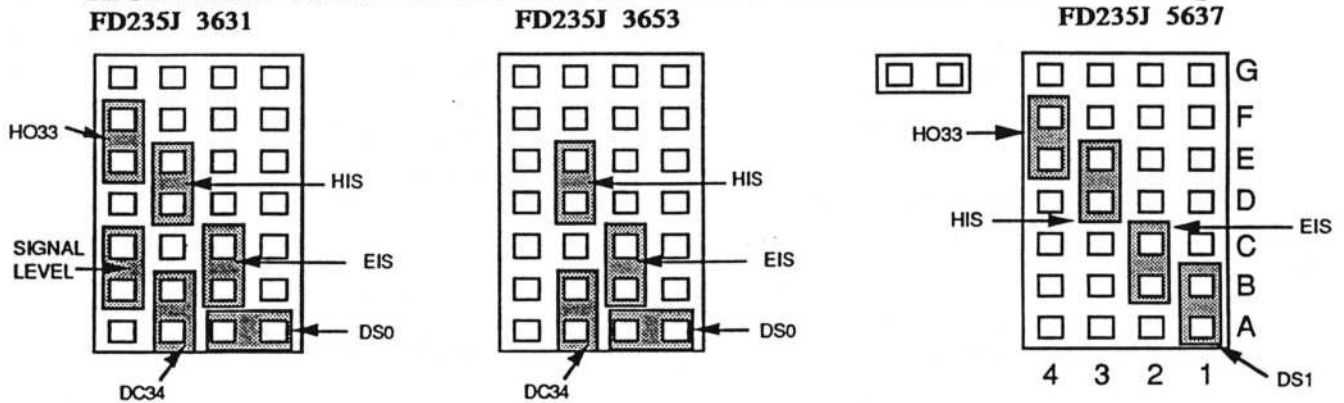
Newport, Rhode Island, USA - Bob Dyl

Teac has released yet another version of their popular ED disk drives. The new drive number is TEAC FD-235J 5637. Since all three drives are being sold we thought it might be a good idea if we reprinted the jumper modifications for all three. Please remember to keep a record of the original factory settings. Once you have copied the original settings, remove ALL the jumpers, re-insert the jumpers according to the drive model number.

Please note that DS0 and DS1 are the drive select jumpers, most drives come from the factory set to DS1. DS1 on a QL relates to flp2, for flp1 set the drive jumpers to DS0.

On drive FD235J 5637 you will notice an additional jumper behind the power connector, REMOVE IT, (shown without a jumper in diagram below) the drive will not operate properly if you leave it in place.

MODIFIED JUMPER SETTINGS FOR OPERATION WITH THE QL

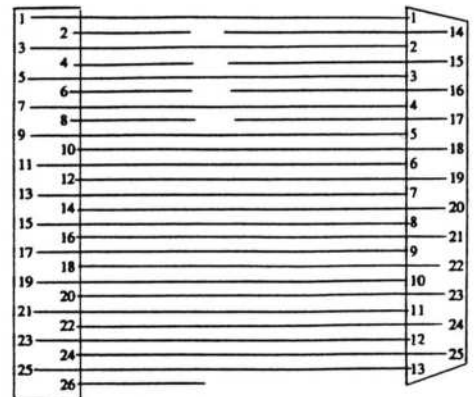


FD235J 3653 WAS FOR SOME REASON SOLD IN EUROPE AS FD235J 3650. Making the above changes will allow the drive to determine what type disk you are using (DD, HD or ED) and to format or read/write accordingly.

SGC Printer Cable (Modified for boxed QL)

Having assembled my QL in a MID-Size Tower Case it became apparent with the purchase of a Super Gold Card that if I wanted to maintain tidy control of the QL's cables, the one supplied by Miracle just wouldn't do. I wanted to be able to connect the cable to the back of the case, then go out and purchase a standard PC cable.

What to do? That was easy, a phone call to Stuart Honeyball, and straight away came the drawing by fax. Please note that the 26 pin connector is the same as the one supplied with the SGC cable, the other end is a crimp style 25 pin female connector. I did not cut up the supplied cable, I built my own (about 12" long). Counting from the 26 pin connector, lines 2, 4, 6, 8 and of course 26 must be cut. I removed a little section of lines 2, 4, 6, and 8 then cut line 26 way back. I then wrapped electrical tape over the cut lines, mounted the cable in the tower, connected a standard PC cable and away it went. Worked perfectly, thanks Stuart.





Town Crier Announcements of Upcoming Events

To have your Show, Workshop or AGM listed by the Town Crier, send all relevant information to IQLR's North American address. Please note deadline dates for submissions listed on page two of this issue.

10 September 1994

(SATURDAY)

QL MEETING:

St Joris College
Roostenlaan
Eindhoven
NETHERLANDS

18 September 1994

(SUNDAY)

ITALIAN QL MEETING

Contact : Davide Santachiara
Tel/Fax: +39 522 70409

Via Emilio De Marchi 2
Reggio Emilia
ITALY

1 & 2 October 1994

(SATURDAY & SUNDAY)

SCANDINAVIAN QL MEETING

Contact: Johan Boman
Fax: +46 31 722 32 92

Gothenburg
SWEDEN

15 October 1994

(SATURDAY)

CHESTER QL SHOW
Tel. Inquires call:
Stuart Honeyball 0904 423 986
Dilwyn Jones 0248 354023

United Reformed Church Hall
Hoole Road (at end of A56 into Chester)
Chester, Cheshire
GREAT BRITAIN
Show Hours: 10 AM to 5 PM

(Organized by Dilwyn Jones Computing)

(Venue not yet confirmed, call Dilwyn or Stuart for exact venue.)

12 November 1994

(SATURDAY)

QL MEETING

St Joris College
Roostenlaan
Eindhoven
NETHERLANDS

IMAGE D

(3D GRAPHICS DESIGN PROGRAM)

Gibsonville, North Carolina, USA - A. Parker Lewis III

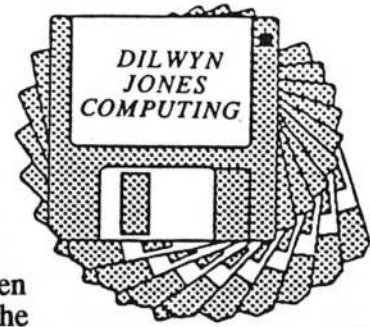


IMAGE D is a program that allows the user to create a three dimensional object and then manipulate that object in space. You can view the object in a number of different ways; wireframe, hidden line, shaded, one view, three views (front, plan and side views on the same screen) and in perspective. The object can be rotated about its three axes x, y, and z. You have the ability to dump the screen to a file for later printing. If you have TOOLKIT II, using the "SDP_KEY p" hotkey command before running the program will allow you to do a screen dump to your printer while the program is running.

The manual describes how objects are made up of slices or sections which in turn are made up of points. It describes how looking at a microdrive cartridge from one end, you see a rectangle which is defined in space by its four corners. The back of the cartridge is another section also made up of four points. When these two sections are joined together they form the object.

The points are defined in space in terms of coordinates which are their location on the x, y, z axes. The x axis runs horizontally across the screen from left to right. The center is the 0 coordinate of the x axis with negative coordinates to the left and positive to the right of the center. The y axis runs vertically from the top to the bottom of the screen. Again, the center of the screen is the 0 coordinate of the y axis with positive coordinates from the center up negative from the center down. The z axis is the more difficult axis to see because it runs from the surface of the screen inside or outside the surface of the screen. The surface of the screen is the 0 coordinate of the z axis. Moving behind the screen (into the monitor) are negative coordinates. Moving away from the monitor, towards the viewer, are the positive coordinates.

When constructing an object, the view on the page is from the z axis; that is looking down on the top of the object. Because the view is from the top, careful planning is necessary to construct the sections to the object. The sides do not show at all and this makes construction difficult. Keeping track of the z axis can be difficult because as the object is being constructed, there are practically no visual clues as to where the section is along the z axis. The only way to know is by careful watching of the displayed coordinates in the lower part of the screen. This requires keeping careful track of all the coordinates for all of the points in the sections of the object.

The best way I found for constructing a simple house, was to build it up from simple polygons

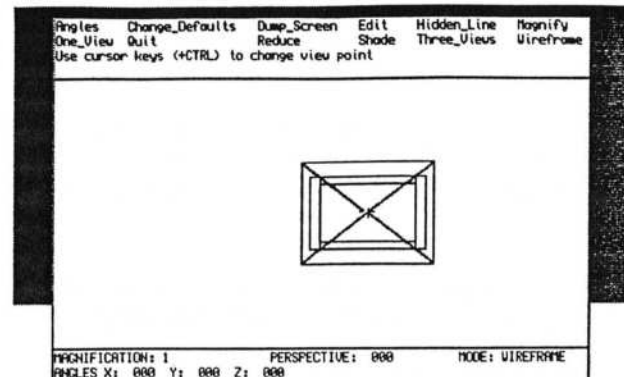
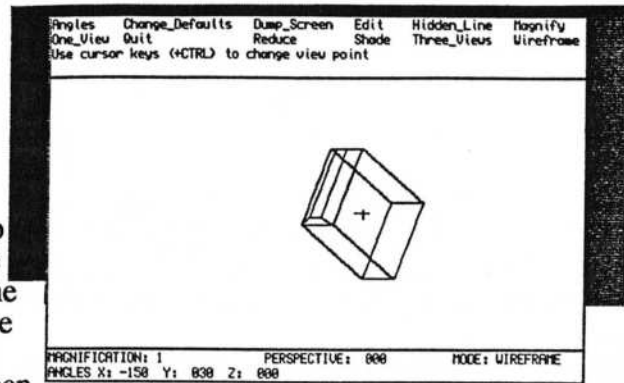
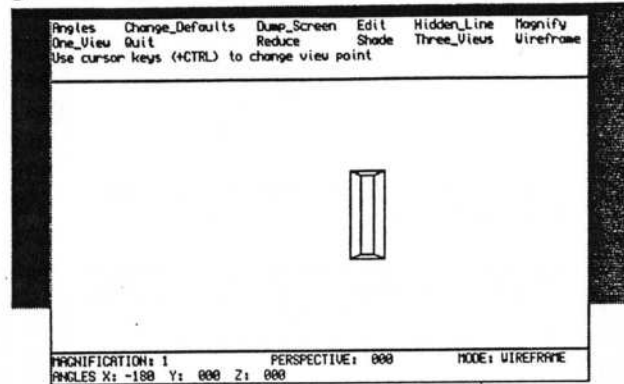
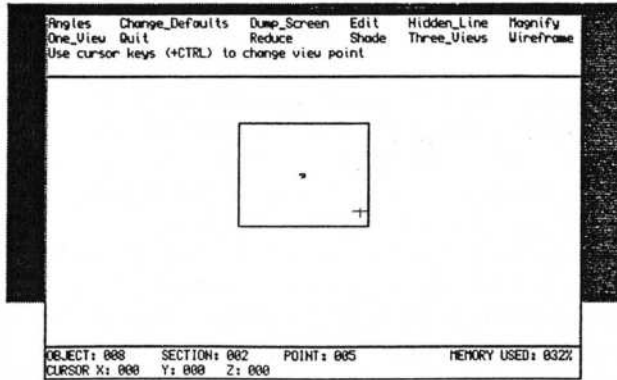
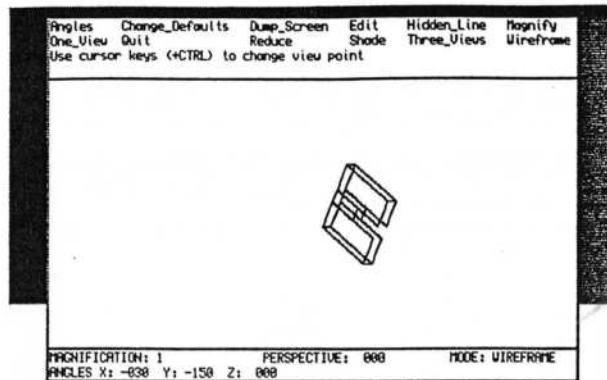
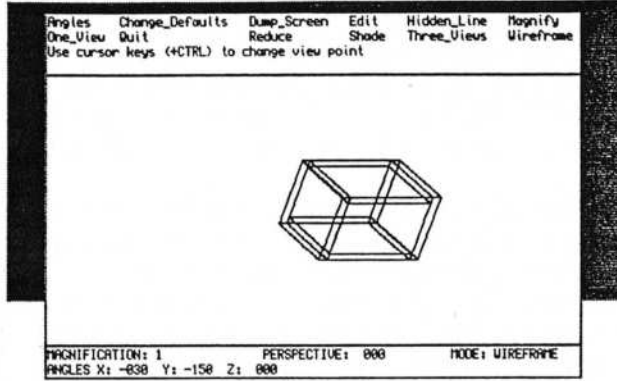
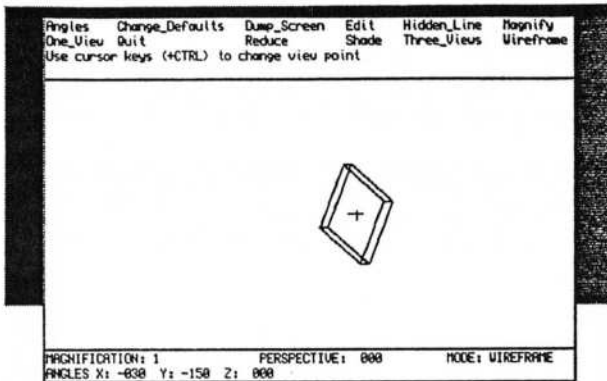
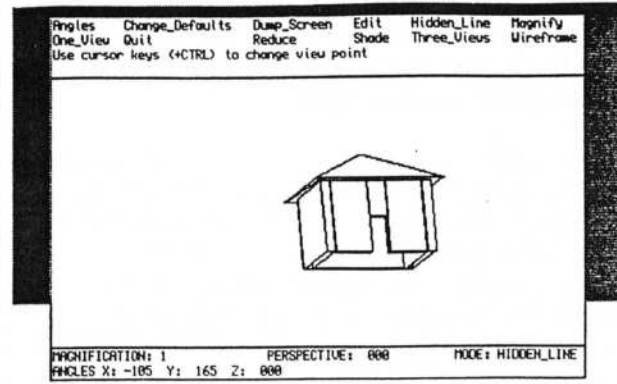
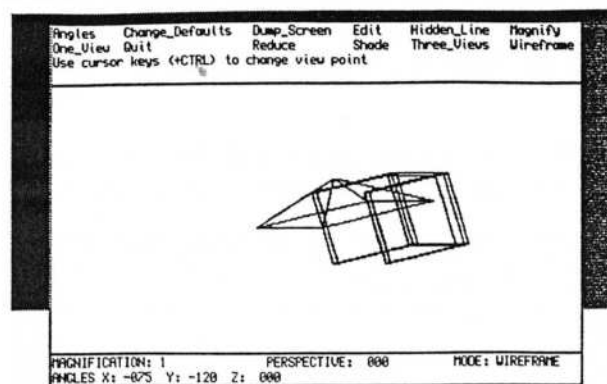


IMAGE D - (CONT'D)

(this can be changed according to the manual). I started by constructing a wall and then combining it with two other copies of that wall making a three sided figure. Each step of the construction I saved as a separate drawing just in case I made a mistake and needed to start over again. This way I wouldn't have to start over from the beginning. I next constructed a wall with a doorway and combined this with the other three walls making a box with a door in one side.



Finally I constructed a roof which took careful planning to know how far on the z axis to move the base of the roof for the proper pitch. I finally combined all these objects to make a primitive house.



The rotations and various views worked very well and the shading and hidden line views were impressive.

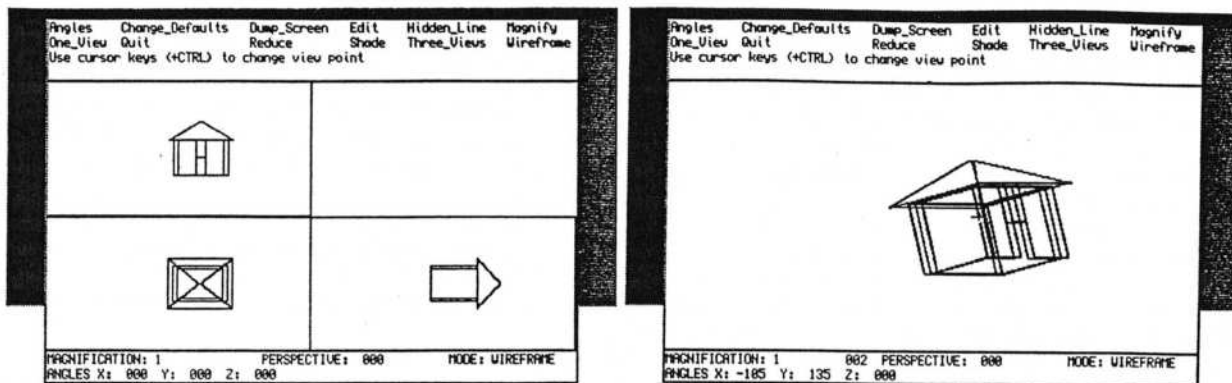
Several problems I encountered in the creation of the sections had to do with the edit functions. First, as I stated before, careful planning is necessary because once you have defined a section and move on to another you cannot return to edit the first section. It can also be difficult because you don't know what you have constructed until you go to a perspective view. When you do, you

IMAGE D - (CONT'D)

can't go back and change what has already been constructed. This caused me to go through several attempts at constructing a wall before I constructed a suitable one. Not being able to go back to edit sections is, to me, a severe drawback.

If the author (Bernard Denchfield) decides to upgrade the program here are some of the changes I would like to see. I would like to be able to change the defaults permanently and thereby eliminate the start up screen altogether. I'd like to be able to erase a section or object and not have to start all over again. A way of joining objects together permanently would also be useful. A real screen dump to a printer could save a lot of time and trouble (although there is a way around this, as I mentioned earlier, if you have Toolkit II). It would be helpful to have a window to see the object in three dimensions, that you are constructing in two dimensions, as you're working on it. Finally, it might be helpful to have some illustrations in the manual to help clarify the instructions.

With a bit of work, a lot can be done with this program. IMAGE D is capable of producing some fairly complicated drawings as the samples that accompany the program show. Although not a real CAD program it comes pretty close especially for the QL. It reminds me of some of the early programs that came out in the PC world just before AUTOCAD became available.



It's a fun program and if you're interested in three dimensional modelling, IMAGE D is well worth purchasing, I haven't seen anything else like it on the QL market.

CHANGE of ADDRESS

Please note page two of this issue. The North American mailing address for IQLR has changed (we were wearing out our postman). The new address is:

IQLR
P.O. Box 3991
Newport, RI 02840-0987
USA

Please use our new address when contacting IQLR's North American office from this day forward. Our Telephone/Fax number remains the same 401 849 3805.

SMSQ - QDOS compatible!

SMS2 already exists for a while, but it was never really advertised to the QL user, for various reasons. Some things in the original plans have changed, but now here it is: SMSQ (SMS - QL-compatible) for all systems with a faster processor and a minimum amount of 1MB of RAM: all ATARI ST/STE/TT, QXL and (Super)GoldCard.

SMSQ has already been tested very carefully, the new SBASIC too. The whole system, as it is planned, is not complete yet, but it already offers more than comparable, even extended, QDOS-systems. For this reason, we thought, it would be a good time to offer it to you in the form it is now, and allow you to update in steps at the same price as the final product would cost you in the end. You pay the same, but you get the things immediately when they are ready, you don't have to wait until the whole system is ready. Here a short list of the various advantages:

- a new, legitim, QDOS-compatible operating system with largely improved scheduling and less system overhead on trap calls, resulting in much better performance.

- SBASIC - you can start as many interpreted BASICs as you want. _BAS programs can now be started with EX, you don't have to compile filters anymore, BASICs can be positioned everywhere on the screen (by call) and much more. The top hit: SBASIC runs interpreted at about the same speed as compiled (QLiberated) BASIC, i.e. MUCH faster than it used to run. There are a large number of improvements: line editing allows more cursor control action (Minerva-users already liked this feature). You can directly enter binary/hexadecimal numbers, preceeded by % or \$, so you don't have to use the annoying BIN/HEX functions. You can have unnamed REPEAT loops, NEXT, END FOR, EXIT can be used without a name too. Integer FOR and SELEcts are possible (and faster). Slices are everywhere possible (try PRINT 2468(3) in QDOS - it gives 6 on SMSQ, the right result, or try PRINT (DATE\$(TO 4) which gives the current year). There are already more improvements, and still more to be done!

- Device Driver Level 3 - gives you flexible formats. You can access a DOS or TOS-Disk exactly like you access a QDOS disk, the system detects the format automatically. If you insert a DOS disk and type DIR flp1_, then you get a directory of it. You can use all the normal file commands in every program (not special extensions like ATR or ATARI-DOS) to access files to copy, delete, load etc. This applies to other harddisk partitions too - you can assign a QDOS-WIN to a TOS partition, e.g. to say WIN2_ is TOS-Partition C or D or ... all this is VERY useful to transfer documents, graphics etc. between various systems.

The ATARI version supports the QL-Emulators/QVME, but it is possible to get a version which supports the monochrome 640x400 display too, which run on ATARIs without emulators (and the Stacy!!!).

Later on, a new Screen driver will come which will allow that printing will always continue, even to a window which is completely or partially overlapped by other windows. Visible areas of overlapped windows will be updated to the screen!!! Then we will have (everyone's wanting this for years) "background" floppy/harddisk operation, i.e. when files are read or written, the whole machine does not stop anymore completely. The third improvement stage will be a pointer-integrated SBASIC environment with Single-step/trace facilities and more.

GoldCard and SuperGoldCard users will get an additional bonus: a really fast screen driver, which does not require you to load other screen accelerator software, because it will give you more or less the same speed! ATARI users are used to that speed, because they got it already in the Level E drivers.

As all the important bits are speeded up considerably (faster scheduler, even if you have a number of open windows or buttons, the system is a lot faster than QDOS, faster operating system TRAP calls, faster BASIC, faster display driver ...) the whole system "feels" much better, smoother when you multitask programs on it.

At the moment, only ATARI users and (Super)GoldCard users benefit from SMSQ. It will become interesting for QXL users as soon as the new windowing environment comes, which will also allow output to (partially buried) windows.

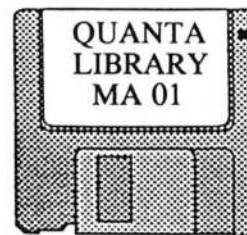
The conclusion: Tony Tebby has done a wonderful job. If you ever worked under SMSQ, you will never want to do any work under QDOS. SMSQ is a supported operating system, which is very important as it allows the introduction of new features, and it allows that known bugs are cured. So please help supporting our future!

	Feature	ATARI ST(E)/TT	(Super)GoldCard	QXL
This exists NOW! Shipping from mid/end of July.	New Operating System	NEW DM 199,-	NEW	already ex.
	Multiple, fast BASICs	NEW	NEW	already ex.
	Flexible Level 3 Drivers	NEW Level C, D or E	NEW DM 199,-	already ex.
	HD Disk-drive support (STE/TT)	NEW already) else	already ex.	already ex.
	TT Fast RAM support	NEW DM 249,-	impossible	impossible
And this will come later..	Monochrome Screen-driver	NEW + DM 50,-	impossible	impossible
	New Screen-driver	NEW + DM 50,-	NEW + DM 50,-	NEW DM 249,-
	"background" Disk/Harddisk	NEW + DM 50,-	impossible	NEW + DM 50,-
	BASIC-Development-Environment	NEW + DM 50,-	NEW + DM 50,-	NEW + DM 50,-
Total price (when all is available)		with rebate, with- out monochrome DM 349,-	DM 299,-	DM 349,-

As we know that many users are using more than one system, we feel it would be unfair to charge two or three times the full price (yes, some people have got QLS and ATARIs and QXLs). Therefore, a special offer to them: a bundle of all versions costs only 33% more, i.e. instead of 349,- for one complete version, 464,17 for all three complete versions. Updates in between would cost 66,50 for all instead of DM 50,- for one. We think this is a fair offer.

AREAS CALCULATOR

Bangor, Great Britain - Dilwyn Jones

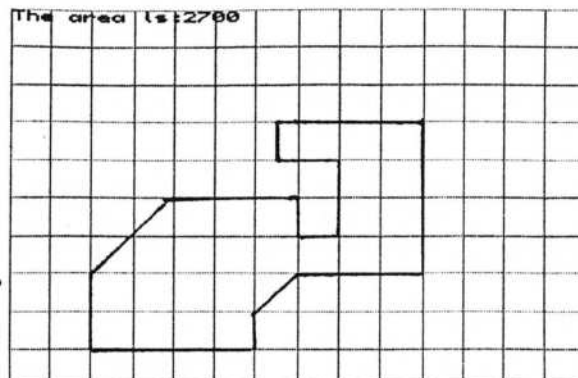


AREAS is a conversion of a very old ZX80 listing from somewhere. It is basically an irregular polygon area calculator, that works with very irregular shapes!

It is very useful as a floorspace area calculator, for example, or to a wall area calculator to determine how much wallpaper might be required for that funny shaped wall. You can draw the shape on the grid on the screen and at the push of a button the area is calculated for you.

This program will not only work out squares - try triangles, L shapes, and complex concave and convex shapes. Beware of shapes that cross over themselves, though. Some will be done correctly (an added bonus) and some will be wrong (this should be regarded the norm).

The screen shows a grid of red squares covering the whole screen. Each square on the grid is 10x10, so its area is 100. Vertically, there are 10 squares in order to comply with the QL's standard SCALE of 100.



Starting at the bottom left square there is a flashing cross-hair cursor. Use the cursor keys or a joystick in the CTL1 socket to move this around the screen (QL joysticks are available from W. N. Richardson and Co. in Great Britain). When you want to place a point of an outline, press SPACE or ENTER (or the fire button on a joystick).

You should draw the shape by marking the corners - they will be joined up automatically as you go along. The last point will be done automatically if necessary. When you press ESC the computer will work out and print the area on the screen.

XOR (OVER -1) line graphics are used, so you may note unpredictable colour effects as different colours overlap. Don't worry too much about this, the main point is the program works. Though if you press ESC before setting any corners the program will give an error message.

This program should work with a cursor emulation mouse, though it hasn't been tested. QIMI mouse users can use their mouse after a fashion - hold down the left button and move the mouse to move the cursor around and press the right button to set a corner. The program works in mode 8 and uses the full screen area on a standard QL, so some parts at the edges may be lost if used on a TV set. If so, just draw the shape anywhere in the middle of the screen. The position will not affect the area calculation.

To keep the listing short, there is not much error trapping, but I'm sure IQLR readers would love to tinker with this little program, wouldn't you? One suggestion for improvement is to allow the scale to be changed instead of the fixed scale of 100 vertically for example currently used. Hints: Ask the user to enter a scale value near the beginning of the program, then adapt the SCALE command in the procedure INITIALISE, and the grid drawing loops in lines 380 to 430. as LINE graphics are used, the program will not stop if the lines go slightly off the edges of the screen, but you may lose the cursor if it goes off the edge of the screen of course.

The hard work of calculating the area is done in lines 140 to 190. The arrays x() and y() contain the co-ordinates of the corners of the shape, and the loop sums the area from those details and the number of corners (the variable 'vertices') (Editor's Note: This is just one of the thousands of programs, utilities etc. available in the Quanta Library. Be aware that the Quanta Library is for Quanta members only. Why not join ?? Please see their advert elsewhere in this issue.)



WRITING REVIEWS

A Commentary
Saugus, Massachusetts, USA - Ed Kingsley

I enjoy reading reviews of new software in IQLR and other periodicals, but I have a very large gripe I'd like to share with those of you who are writing some of these articles.

I can't tell you how many times I've struggled through a software review, reading in often minute detail about what every Function Key is for, how the program is loaded, what every screen and Menu looks like and how long the manual is, and still come out the other end without any idea at all about what the program was written to DO! This is frustrating, folks.

Please, please, please, BEGIN your column with a clear, concise and understandable DESCRIPTION of exactly what this particular piece of software DOES! (What is it good for and why would I want it?)

Obviously, you know what it's intended purpose is - tell me. Writers often make incorrect assumptions about the knowledge level of their readership and perhaps they sometimes just don't think the 'process of explaining' through as thoroughly as they need to.

Here's a case in point, and I really don't mean to single out any one writer. There was a review recently of a Mandelbrot program. Now, I have a vague idea of what Mandelbrot programs do, but other readers may not. There was no explanation in that article of what Mandelbrot means or what the program 'does'. If you're familiar with fractal graphics, the article probably would have made perfect sense to you. If you weren't, I don't think you would (or could) have learned much from reading it.

Just one or two sentences at the beginning of the piece defining the concept of Mandelbrot equations and their graphic representation would have given a beginner somewhere to start from and a meaning to the accompanying printouts. I was always taught to begin a speech or a paper with a short description of what it was you were going to tell the listener or reader.

Then, to discuss the subject matter in whatever detail was necessary, always explaining new vocabulary and concepts as you went along in order not to be trying to define one unknown by reference to another.

And finally, in a summary, to state again, if possible in a different way, what it was that you just tried to explain.

There are many different ways to compose an article that would generally follow these criteria, and keeping it as simple as possible always helps. Try visualizing how you would want someone else to explain a complex subject to you.

I'm currently putting together a software review for an upcoming issue of IQLR myself, and I'm looking forward to seeing just how well I take my own advice. Let me know if I don't make you understand. (*Editor's Note: Don't worry Ed, we'll let you know.*)

Remember: In theory, there is no difference between theory and practice, but in practice, there is ...

One other thing while I'm at it. When a correction to a program listing is published, I think it would be helpful to give the NAME of the article or the program you're talking about instead of writing "In Volume 3, Issue 4, there were errors in the listing due to , etc."

Thanks for listening.

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LIGHTNING SPECIAL EDITION

If you are using a QL in any shape or form or with any accessory (including the new Super Gold Card, QXL, Gold Card, Trump Card, ST/QL, Thor, PC CONQUEROR, Minerva, TURBO, and even the humble unexpanded microdrive-only QL), you really should be using **LIGHTNING SPECIAL EDITION**. If not, you are very severely and unnecessarily (the program is cheap) slugging your system's performance. The superb **LIGHTNING SPECIAL EDITION** is capable of both automatically and very significantly accelerating almost every aspect of QL operation - whatever it is you use the QL for. *"More than 10x is achievable and 2x-4x is typical"* (quoted from page 24 of review in April '90 QL World). The speedup ratio is virtually independent of the system. However fast or slow is your QL hardware, **LIGHTNING SPECIAL EDITION** will accelerate it much further. All recent versions of our software are carefully optimised for 16/32-bit processors, without compromising 8-bit working. The program has not got any adverse side effects at all, and it fixes certain malevolent (i.e. lock-up or corruption inducing) anomalies. Installing it is a fast, once-only operation that takes two or three minutes and which assumes & requires absolutely no knowledge of programming or of anything even remotely technical about the QL: you are simply asked whether you wish to speed up text, maths and graphics individually, or **everything**. Unless you have a very good reason, opt for everything! Then **LIGHTNING SPECIAL EDITION** copies itself onto your boot-up disks, instantly modifying their **BOOT** files. Now every time you start up, full throughput acceleration is automatically invoked and everything goes much smoother and faster. In case you think that this is too good to be true, we quote verbatim the concluding para of the Sinclair QL World review: *"I could not fault Lightning Special Edition on anything. It is a clear winner and a best buy at £49.95"*. The program includes a bundle of accessories (e.g. change screen attributes including character sizes, colours and fonts in other programs - even in Quill, smooth scrolling and much more) and tweaks (vary maths and/or graphics precision, a null device, a drain and much more). Stop reading the manual where we tell you to - at around page four - if simple use is all that you want. The program also includes 84 excellent small fonts for use with **PERFECTION SPECIAL**

EDITION, PROFESSIONAL PUBLISHER and other programs - a real bonus!

LIGHTNING SPECIAL EDITION includes both a ROM (for plugging in at the back of your QL - no screwdriver needed) and a disk (or cartridge, if that is what you specified). As some QL hardware (QXL; either Gold Card for speed reasons) is not ROM-efficient, or you might have something already plugged in (ICE, TK2 if not already on your disk interface), you should opt for the version of the program minus the ROM for just £39.95: this is the **GOLD CARD VERSION**. If you have two QLs, say one of them a QXL / (Super) Gold Card and one "ordinary", you should go for the full **LIGHTNING SPECIAL EDITION**, as you can use the ROM on the second machine. Extra ROMs cost £10 if ordered at the same time as the program, else £15.

Q1) What programs benefit from **LIGHTNING SPECIAL EDITION** (LNGSE), and how much? A1) All programs, including PC emulators, benefit. Perhaps our **PERFECTION SPECIAL EDITION** benefits most. Interestingly, the more competently an application is implemented, the greater its expected acceleration from LNGSE..... This is because all good programs contain very fast-working code: their only bottleneck is the QL ROM, in which they may end up spending a proportionately large amount of time. LNGSE cures the congestion. Q2) Why didn't DP build LNGSE into all its programs? A2) It would be very inefficient to do it that way: because of multitasking, you'd pay for the RAM-space over and over again, let alone all the wasted disk space. Also, LNGSE benefits all programs, not just *our* ones. Q3) Does the QL "know" it is running LNGSE? A3) No, and there is no operating overhead either. And the QL isn't "running" LNGSE in any sense of the word. In its first and only tenth of a second of life, LNGSE pages out, using a door deliberately left open by the QL's forward-thinking designer, large chunks of QDOS (AH, JM, JS, MG and all Minerva operating system variants) and replaces them with our fine-tuned supercode. The door was carefully designed so that even the most errant programmer would not abuse it. After that, the QL has no way of knowing it has been "taken over". Q4) I'm concerned about compatibility. While I've heard only good reports about LNGSE, I've read about *other* products being involved in conflicts with application programs. A4) Firstly, LNGSE is not a replacement for the

whole of the ROM, only for some parts. We have, therefore, not had to make ad hoc changes to any of the many good bits, in order to avoid copyright problems. As explained in 3), we are in fact using a route specifically designed into the QL to enable ROM code to be efficiently patched. Secondly, we are very pragmatic about "improvements" and bug-fixes: one man's bug is another man's feature. Of course the original ROMs had faults - but most of these are benign and well-known (DP can supply an official bug-list to customers). To fix most such bugs would be unwise, as a lot of existing software probably either takes some advantage of, or side-steps, them. If you fix the bugs, some of this software is liable to fail, perhaps in subtle ways (all the more dangerous). It is quite unproductive apportioning blame in such cases - it is irrelevant whose fault it is: if the end-user gets software problems, it is simply **VERY BAD NEWS** for everyone. LNGSE avoids these pitfalls by accurately emulating all harmless QL anomalies (much harder than fixing them - we have to foresee all outcomes of the oddities). To give but one example, the QL's line-drawing routine often draws lines the wrong length (>1 pixel out). LNGSE could easily fix this (in fact, LNGSE provides a software switch to opt for correcting) but we default to emulating this anomalous behaviour. If we did not, many grid-drawing programs would end up producing odd-looking results, as their authors have understandably had to set line lengths "wrong" in order to get the right length on-screen. Consequently, LNGSE is - yes - fully compatible with everything. Q5) Is LNGSE a compiler? A5) No - **TURBO** is. Naturally, LNGSE greatly improves the performance of compiled programs, and by a better than multiplicative ratio (the reason for this mathematical effect is given at the back of the LNGSE manual). As most commercial software is compiled, you are the beneficiary! Q6) Why is LNGSE so cheap? A6) The truth is, we know that once you have experienced **LIGHTNING SPECIAL EDITION**, you won't abandon your QL. As **THE QL** software publisher, that is rather good news for us. Q7) One more reason for buying LNGSE? A7) Look at our **SPECIAL DEALS**, and *think*. **SPECIAL DEALS** can allow you to get additional programs for free, even to get us pay you to buy them! Hint: Combine cheap and dearer programs.

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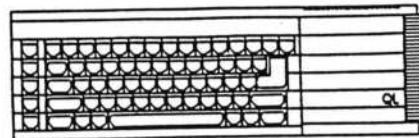
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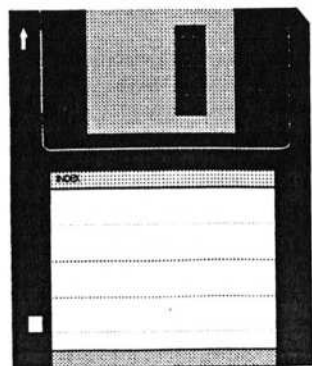
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COMPUTERS 101 (A Tutorial) Part 1

London, ENGLAND - Mark Knight

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1 The components of a computer system.

1.1 *What is a computer?*

Before starting to describe some of the features and characteristics of a computer system, it is best to define precisely what we are describing. For the purposes of this series, a computer is an electronic device composed of the following minimum set of components:

A Power supply. A SYSTEM CLOCK. Some MEMORY. A PROCESSOR, usually a MICROPROCESSOR. At least one INPUT device. At least one OUTPUT device.

In addition, a computer may have one or more MASS STORAGE devices.

1.2 *The Power supply.*

The power supply needs little description here, as it has an obvious function, and none of the other components can do anything without it. Power supplies are usually linked to the mains, and an additional luxury that some systems employ is an UNINTERRUPTABLE POWER SUPPLY. This is a system that takes over if the mains supply fails, quickly enough so that the computer continues to function without fault. Such systems are of two main types:

a/ Emergency short term supplies. b/ Long term backup supplies.

Emergency short term supplies are designed to allow a system to function for a few minutes. They usually feature a rechargeable battery, capable of storing sufficient power to keep the computer functioning just long enough to save all current work and close down properly. Even if the mains power fails in the middle of saving a file to disk, the file will be undamaged, the save operation can be finished, and the system properly shut down before the emergency power runs out. While running normally, the emergency supply unit will recharge the battery. Most uninterruptable power supplies are of this type.

Long term backup supplies are used in places where uninterrupted power is critical, such as hospitals and financial institutions. These comprise a two phase protection, first an emergency battery supply starts up to keep the system running, and then a generator is started to allow continuous power to be maintained. This will usually be a fuel-driven generator, turned by a diesel or other piston engine. Such supplies are extremely expensive to buy and expensive to maintain properly.

1.3 *The System clock.*

The SYSTEM CLOCK is not a device for telling the time - this is done by the REAL TIME CLOCK. Although a real time clock is something that most computers have, though it is not strictly an essential feature of a computer. The system clock simply supplies a reference pulse of electricity, usually switched between five volts and zero, many times each second.

COMPUTERS 101 - (CONT'D)

This pulse is used by all of the electronic components within the system to ensure that they all work at the same speed, and at the same time. A communication pulse between components usually has to last exactly one cycle of the clock pulse, no longer and no shorter.

The speed of the system clock is an important feature of the system as a whole. The original, unexpanded QL system clock runs at 7.5 MEGAHERTZ (usually abbreviated to Mhz), which is seven and a half million pulses per second. The old Sinclair Spectrum used a 3.5Mhz system clock, the and the first IBM PC used a frequency of 4.77Mhz. The CST Thor XVI uses a system clock running at 8Mhz, while the Miracle Systems Gold Card, using the same type of PROCESSOR, runs at 16Mhz, and so a QL fitted with a Gold Card is around twice as fast as the Thor XVI.

Note that the system clock speed is not the only thing that determines the speed of a computer. One computer running at 16Mhz may be very much faster than another running at 25Mhz, if other factors are in its favour. The clock speed will give a good guide only if the PROCESSORS are the same, and if the speed of the system's MEMORY is similar to the clock speed. More details of factors affecting the speed of a system are described later in the series.

2 Memory.

2.1 *Switches and Bits. ROM and RAM; EPROM, EEPROM and PROM; DRAM, SRAM and VRAM.*

In order that a computer can store any INSTRUCTIONS or DATA, it needs some memory circuits. Computer memory stores only numbers, nothing else, and in order to use this memory for anything other than storing numbers the numbers are used as codes for something else, such as an instruction or a letter of the alphabet.

Some memory is used as a store for information that does not change, while most is used for temporary information, or at least for information that can be changed. Memory chips that cannot be changed are usually termed ROM, short for Read Only Memory, as the contents can be read, but not rewritten.

The other main class of memory is RAM, short for Random Access Memory. RAM finds its name from the fact that any part of it can be chosen at random, and then the DATA from that part can be read. This distinguishes it from SERIAL ACCESS devices, where DATA can only be read in a set order.

ROM chips can contain DATA or programs, just like RAM, but cannot normally be changed. The QL holds the SuperBASIC INTERPRETER in ROM, along with the QL's OPERATING SYSTEM, of which more later. Some computer systems hold only a startup routine in ROM, which has to read the OPERATING SYSTEM from a disk. This has the advantage that the supplier can easily provide updates to the OPERATING SYSTEM. The QL has the advantage that a virus program can't change the system in ways that damage it, as the system is in ROM memory and can't be altered without physical violence.

While most ROM has the contents set when it is made, some ROM can be changed, if an elaborate procedure is followed. In some cases this involves exposing the chip to ultra-violet light, then writing to it using a special circuit, known as an EPROM PROGRAMMER. The chip itself is known as an EPROM, short for Erasable Programmable Read Only Memory. EEPROM is Electronically Erasable, Programmable Read Only Memory, and can be erased using a special circuit that supplies more than the usual five volts, or that connects to the chip in a special way. PROM, or Programmable Read Only Memory, is simply ROM that can be written once, and then the contents cannot be changed a second time.

COMPUTERS 101 - (CONT'D)

RAM memory comes in two main forms; SRAM and the more common DRAM. DRAM is short for Dynamic RAM, as the memory in such a chip is dynamically changing all the time. To keep the contents stable, a special circuit supplies a REFRESH SIGNAL, sometimes at every clock cycle, sometimes at every second, third or less frequent clock cycle. The precise requirement for a refresh signal is not fixed, and may vary from one type of RAM chip to another.

SRAM is short for Static RAM, and SRAM keeps its contents in a stable form, and does not have to be refreshed. Because of this, SRAM is the fastest kind of RAM, and is often used in a RAM CACHE, also known as a MEMORY CACHE. SRAM is also used sometimes in minicomputers as main memory, and in such machines can be a significant proportion of the cost of the system.

The third common type of RAM chip is known as VRAM, which is short for Video RAM. When a computer displays data on a screen, it does so by having a memory location for each screen character, or in the case of a machine with a graphics display capability, a memory location for each dot on the screen. The number in the memory determines the character displayed, in the case of a character based display, and the colour of the dot in the case of a graphics display.

Many times each second, the computer's video chip must read all of the display memory, and then compose the screen image and send it to the display device. In the case of the QL, this could be a television or a monitor, in most modern computers it must be a monitor. Using ordinary memory chips, if the processor is trying to alter data on the screen when the display chip reads it, the processor must wait, and so wait states are imposed so that the graphics chip can continue. This slows down the process of changing the screen, limiting the rate at which graphics can be produced on that system.

In order that a system does not have to slow down to write to the screen memory, special VRAM chips can be used. VRAM can be read by the display chip at the same time as it is being read or written by the processor, and so the restriction imposed by using ordinary memory for the screen is lifted. Most VRAM is modified DRAM, and the cost is between that of ordinary DRAM and the more expensive SRAM. Some special graphics and animation systems now are using SVRAM, or Static VRAM, which is extremely expensive.

The QL display, unfortunately, uses slow, ordinary 8-bit DRAM, the same as the rest of the 128k memory in the machine. The Gold Card replaces the QL memory with fast, 16-bit DRAM chips, but it has to use the same screen memory, as the display chip is part of the main circuit board. The fast 16-bit processor on the Gold Card is waiting for the display memory to catch up with it a lot of the time when writing to the screen, so although it is much faster than the normal 8-bit QL processor, it is not as fast at writing to the screen as it would be if the screen memory was proper VRAM. The Super Gold Card has a similar bottleneck, with its even faster 32-bit processor, though this board is still much faster than a Gold Card system, even when updating the screen.

Memory chips are standard components, now purchased in bulk by manufacturers of computer products and systems. Many different chips are available even within each of the main types outlined above, but more detail would be beyond the scope of this series. Memory organisation, however, is worth exploring.

The memory on each memory chip is composed of a number of switches, each either on, representing a number one, or off, representing a number zero. This forces designers to build computers to use the BINARY number system instead of the more familiar decimal numbers. Many types of circuit are used in different kinds of computer, and a detailed account of the electronic techniques used is well beyond the scope of this series.

COMPUTERS 101 - (CONT'D)

The switches are individually used to store ones and zeroes, and each switch is known as a BIT. A bit can store a one or a zero, and sometimes the fact that a switch is involved is forgotten, and the memory is described as consisting just of bits.

2.2 *Bytes, Words and Longwords - Kilobytes to Gigabytes and beyond.*

If the system, and its computer programs, had to use each bit separately, then programmers and designers would be struggling at some stages in the development of a new system. To make this problem easier to cope with, the bits are arranged in groups of eight, known as BYTES. Eight BITS make one BYTE.

A Byte can store binary numbers from 00000000 to 11111111, or in decimal from 0 to 255. Constantly, the computer deals in binary numbers, while the user uses decimal, and often programs spend some of their time converting from one form to the other for the benefit of human beings.

Numbers from 0 to 255 are useful enough for some purposes, but much wider ranges are required for practical use, and so Bytes, too, can be grouped to make them easier to work with for some applications. Two Bytes make a WORD in most computer systems, made up of sixteen bits. Numbers in a Word, converted straight to decimal, can range from binary 0000000000000000 to 1111111111111111, or from 0 to 65,535.

Next comes the LONGWORD, made up from 32 bits, and the decimal range of Longwords is from 0 to 4,294,967,294. The QL uses mainly Words and Longwords to store individual instructions, and anything from a bit to a series of millions of Bytes to store DATA.

In Bytes, Words and Longwords, there is a variation that can be used to give negative numbers. One of the 8, 16 or 32 bits can be reserved so that it is not counted as a part of the number, but simply indicates if the number is positive or negative. So the range for Bytes becomes -128 to +127, Words range from -32,768 to +32,767, and Longwords from -2,147,483,648 to +2,147,483,647. To distinguish if a memory location is using a sign bit, it is described as a SIGNED BYTE or an UNSIGNED BYTE, a SIGNED WORD or an UNSIGNED WORD etc.

When storing whole numbers within the given ranges, the Byte, the Word and the Longword are usually more than adequate, and can be grouped together by programmers if required to represent even larger ranges. Fractions present another problem altogether, as a bit can only store one or zero, not a half. As a result, a special format is used to store decimal fractions, using, in the QL for example, one Longword and one Word, multiplied together in a special manner to represent a FLOATING POINT result. When storing floating point numbers, special program routines often have to be written, as many PROCESSORS have no floating point handling abilities at all.

To assess how much memory a computer has, Bytes, Words or Longwords could be used. The problem is that many computers have millions and millions of them, so making it necessary to use very large numbers to describe the memory in this way. To avoid this, standard units based on quantities of Bytes are used. As well as being used to assess the memory, storage devices such as HARD DISK DRIVES are often rated for their storage capacity in the same units.

The first of these units is the KILOBYTE, commonly abbreviated to Kb, kb or most often just k. A Kilobyte is 1,024 Bytes of memory. 1,024 is used instead of 1,000 as it is a power of two, and so converts readily into the internal binary numbers that a computer uses.

1,024 Kilobytes make up the next basic unit of memory, the MEGABYTE, abbreviated to Mb or MByte, and (rarely) to just M. This is over a million Bytes, a considerable amount of memory, yet is not adequate for some computer systems at all, as they need several Megabytes of storage.

COMPUTERS 101 - (CONT'D)

The next unit, after the Megabyte, is the GIGABYTE, or 1,024 Megabytes, most commonly abbreviated to Gb. Representing over a thousand million Bytes, the Gigabyte is currently a rare amount of memory for a computer to possess, but someday it may well become essential for most systems, just as 48k was once a lot of memory, yet now 4Mb is often expected to run the most basic applications on some computers.

2.3 Keeping track of where it is - the address, the address bus and the databus.

Having a lot of memory in a computer is of little use if the system is unable to work out where something is stored after it has been placed in memory. Each Byte is therefore given a MEMORY ADDRESS. This address is simply a number, from zero upwards in most cases, so the first Byte in memory is said to be at address 0, the next at address 1, and so on.

The circuit that fetches DATA from memory is called the databus. The databus can fetch a Byte at a time, or often in modern systems more than one Byte at a time. The databus is said to have a BUS WIDTH. The bus width is the number of bits that can be fetched at one time, so an 8-bit bus could fetch one Byte at a time, a 16-bit bus could fetch 16 bits, one Word, at a time, and the 32-bit bus can fetch 32 bits, or four Bytes (a Longword) at a time.

A computer is often said to be an 8-bit, 16-bit or a 32-bit system, depending upon the bus width for the system. The Sinclair Spectrum is an 8-bit computer, using an 8-bit databus, and so is the unexpanded QL. A QL with a Gold Card fitted, however, is a 16-bit system, and with the Super Gold Card is a 32-bit system, facts which are just some of the reasons why they make your QL so much faster. Another term used in describing the structure of a computer is ARCHITECTURE, so a 32-bit system might be described as possessing a 32-BIT ARCHITECTURE.

A few systems exist which are true 64-bit computers, but these are still rare and expensive, costing tens or hundreds of thousands of dollars. The bus width is one of the influences upon the overall speed of a computer, as if two systems both run at a clock rate of 8Mhz, for example, and one is an 8-bit system while the other is 16-bit, the 16-bit system can fetch instructions and DATA from memory twice as quickly. Of course, if the 16-bit system processor cannot process DATA efficiently, then it may still be a slower computer, though this is unlikely.

As well as the databus, the system will use an ADDRESS BUS, to decode the requests for storage and fetching of DATA on the databus. The address bus is rarely mentioned, but is important as it determines the maximum amount of memory that can be built into a system. For example, a simple 8-bit address bus would have 8-bit address capability, giving the same range of addresses as a Byte, i.e. 0 to 255. This would allow 256 Bytes of memory, not a great deal for most systems, but adequate for some microcontrollers used in washing machines, videotape decks etc. Many such purpose-made control processors have the RAM on the same chip, as it makes devices containing them cheaper to design and build.

It is common for systems with an 8-bit databus to have a 16-bit address bus, giving up to 64k of memory. Most 16-bit systems have a 20, 24 or 32-bit address bus, giving access to a maximum of 1Mb, 16Mb or 4Gb of memory. The system does not actually have to contain this much memory, it is simply the maximum that the address bus can cope with. Often the circuits in the computer can only cope with some much smaller amount, for power consumption, cost or space reasons.

2.4 Speed limits and cache memory.

Computer memory in microcomputers is usually made up of standard memory chips, purchased in bulk by the manufacturer. One of the problems associated with such chips is that, although they work very quickly, they do have a speed limit.

COMPUTERS 101 - (CONT'D)

In addition, memory chips have not one, but two response speeds when they are being read. The first time a chip is read, it responds at its top speed, but if another Byte, Word, or Longword is requested on the next system clock cycle, the chip will respond by making the databus wait for the DATA. This is often a wait of one clock cycle, known as a WAIT STATE, but it may be more than one on some systems. The QL screen memory is notorious for imposing wait states upon MACHINE CODE programmers, and I was once informed that it can impose up to 35 wait states in some circumstances. (The normal average for a QL is between one and two wait states, so don't think that the QL is too badly designed).

Once the chip is left alone, it recovers its ability to pass out DATA at top speed, i.e. within one clock cycle. The time between the first fast read from a chip, and the next fast read without wait states, is called the RECOVERY TIME of that chip.

The minimum time in which a RAM chip can continuously feed DATA out without imposing wait states upon the databus is called the RESPONSE TIME of the memory chip. The response time is measured in NANoseconds, (often ns) and there are one thousand million nanoseconds to one ordinary second. To give some idea of the speed of modern memory, ponder upon the fact that 150ns chips are considered to be slow.

As a program in a computer runs, it may well decide to fetch a block of DATA, say thirty Bytes one after the other somewhere in memory. The first Byte from a particular memory chip may be read in one system clock cycle, but if the machine has a fast processor the remaining Bytes are likely to be read at one Byte for every two clock cycles, each read waiting for the recovery time of the chip to be reached before the next. With a very fast system clock, this may rise to two or even three wait states as the memory chips cannot keep up.

One thing that can be done is to provide faster memory chips. The trouble with this idea is that it is ferociously expensive. For example, to provide 1Mb of DRAM for a system using 150ns chips might cost a manufacturer around \$8, while using 100ns chips would be closer to \$14. The more usual modern speeds of 80, 70 or 60ns would cost perhaps \$30 to \$60 per Mb. 25ns SRAM is made, but would cost over \$150 per Mb, possibly over \$200, and would push the cost of the system through the roof.

Even 20ns SRAM is available, but is rarely used at the moment since the cost is prohibitive for any but the most speedy systems, and these are expensive enough to justify it. Of course, prices vary and those given are likely to be well out of date by the time you read this, but the comparative expense is unlikely to have changed.

To give some idea of how incredibly fast these response times are, consider that in 25ns a beam of light would have time to travel the length of about three cars in a rush-hour traffic jam.

One common answer to keeping memory fast enough for modern processors is called the CACHE MEMORY. (Cache is pronounced the same as cash). This exploits a common feature of computer systems running programs; they often fetch instructions and DATA in blocks, one Byte, Word or Longword after another in a group in memory. The PROCESSOR fetches one DATA item from memory, does a bit of processing, then fetches another DATA item, does some more processing, and so on.

The Cache is an area of very fast memory, commonly 25ns SRAM, while the rest of the system uses 70 or 100ns DRAM. When a memory read is done by the processor, the memory is read into the cache as well as into the processor. As the processor does its processing, the cache does not wait, but reads the next item in memory, just in case it is needed, and if there is time as many as it can fit in. When the processor wants the next item in memory, the cache already has it, and so the fast memory is read instead of the slower, main memory.

COMPUTERS 101 - (CONT'D)

The cache memory has no fixed address, but "pretends" to be a block of main memory, starting at whatever address the cache controller decides is best at any given time. Whenever a fetch is required from another area that has not been copied to the cache, the cache controller starts to refill the cache from slow memory again, temporarily slowing the system. Because of this, the system slows down to normal as soon as the program currently running starts to fetch DATA from a different area of memory, but the effect is still useful.

Computer programs spend so much time fetching blocks of DATA that in practice a cache works very well. In addition, programs often spend some time running a small loop of instructions, jumping back to the start of the loop to do some work over and over again. If the whole of the loop fits into the cache, the slower memory will not have to be used at all until the program jumps out of the loop.

While a program is running, the system often has to fetch an instruction, and then some DATA, another instruction and then perhaps some more DATA, and so on. With a program where the DATA is embedded in the program code, this will not upset the cache, but suppose the program and DATA are at addresses in memory nowhere near each other: The instruction is fetched, then some DATA from elsewhere, then back to the instruction area, then back to the DATA area for the next DATA item. At each change of address, the cache is marked as useless by the cache controller chip, and the slow memory access is required.

One solution is to have the cache work only for fetching instructions, or only for fetching DATA. This speeds up the system, but makes the circuitry much more complex, as the processor has to be able to inform the databus what it is fetching, an instruction or some DATA.

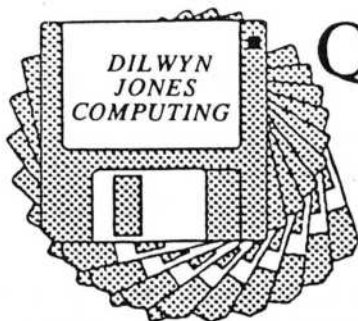
This problem is solved by using a cache controller chip that employs a system known as a SET ASSOCIATIVE CACHE. This typically divides the cache into four separate areas, each linked to one area of memory at a time. So, the instructions would be linked to one area of the cache, while the DATA in the above example would be fetched from another part of it. The name is derived from the technique used by the controller, which effectively makes the cache memory into a set of caches, each associated with one area of memory.

A set associative cache could obviously be divided into two, three, four or more areas, and possibly a hundred if the designer wished, you might think; well it can't. If the cache controller chip is too complex, it becomes more expensive, and in addition there are limits to the speed at which it can work. Keeping track of a sixteen way set associative cache goes right to the limits of current technology, while two or four way controllers are much more common for cost reasons. In addition, dividing the cache up into too many areas makes the areas very small, and then they don't hold enough DATA or enough instructions at one time to offer much of an advantage.

(Editor's Note: This series of articles (COMPUTERS 101) is an important step forward for IQLR. Comprising four to five parts its intent is to supply a ready knowledge of computer basics. While they may be elementary to some, interesting to others and educational to still others, we hope you enjoy them. If you have any questions or would like to add to the articles, Mark Knight can be reached through IQLR.)

NEGOTIATIONS with QL WORLD

IQLR has ended negotiations with QL World without obtaining the 1,300 or so QL World subscribers. We determined that their asking price was beyond our current means.



QL GENEALOGIST 3rd Edition

Billerica, Massachusetts, USA - Gary Norton

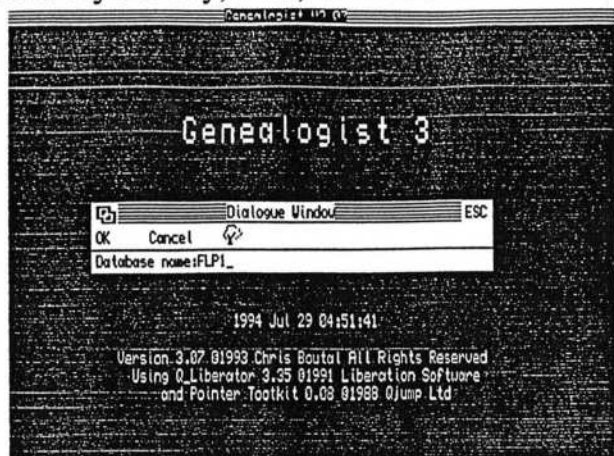
This installment of Chris Boutal's Family Tree program is the latest and I must say, greatest! QLG-3 uses the now popular Pointer Environment. In addition, other improvements, some significant and some minor, have been incorporated.

To run QL Genealogist 3 (QLG-3), a QL with at least a 768K Trump Card is required. The manual says the program will run on a 512K QL, but I attempted to load the program on a QL with a 512K Expanderam, but received the "Out of Memory" message. I was going to review this version of QLG for the May/June 1994 issue of IQLR, but I had to wait until I received my Super Gold Card before I could even load it. Hence, you got the review of Version 2. You'll also need at least one disk drive and TK2.

Since the commands in Versions 2 and 3 are similar, and since I went into much detail in the Version 2 review, I will only cover the differences between the two and the general feel and operation of QLG-3.

The first thing you'll discover if you've upgraded from an earlier version is that your old data base will not load in QLG-3. Don't panic - you don't have to retype in the data base. If you peruse the disk's directory you notice a file DEX Boot (data exchange). This is a conversion program to convert your old data base into QLG-3's required format. This is an easy, and painless, conversion process. Besides the conversion, DEX gives you options to export to Archive, Import from Archive, send the Tree to Abacus, or send Places to Easel.

At this point, while I'm thinking of it, I am unable to get the Serial Mouse to work with this program. My copy of QLG-3 is version 3.07. I've had no problem using the mouse on other Pointer Environment programs, and have included the 'LRESPR SerMouse' line in the Boot file similar to the other programs. As good as QLG-3 is, without using a mouse, you cannot fully appreciate this program. I should note that QLG-3 is fully functional without a mouse. It performs competently using the cursor keys or a joystick. However, to quote Chris Boutal in the manual, "... but after using a mouse for a short time, I am sure you will soon wonder how you ever did without one." I agree, so if someone has any ideas, I'd really appreciate hearing them. By the way, YES, Sermouse is loaded onto the disk.



After booting QLG-3 a Dialogue Window appears asking for the data file name. This can be somewhat confusing. The default shows FLP1_. If your data base is in some other drive, type in FLP2_, MDV1_, WIN 1_, etc. Do not type in the file name! Once loaded you are presented a red screen with a menu bar on the bottom, with selections of Family Net, Research, Parameters, Save reLoad, and Quit. Use either the cursor keys, joystick, mouse (if you have more luck in getting it to work than me) to

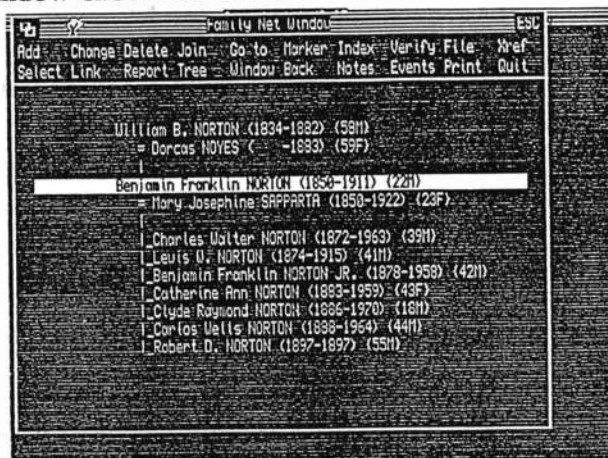
select your choice. Press the Space Bar to select. Another way to select is to type in the first capitalized letter.

At this point, select Family Net and before entering any of your data, go through the Tutorial. As with the other two versions, the tutorial covers most of the areas of the program you will be concerned with. When the tutorial is completed, you will easily enter in your own data base, and you will know the logical way to enter the data.

QL GENEALOGIST 3 - (CONT'D)

When the network is being created, the first window shown on the screen is to select the sex of the name being entered. This is new for this version, and in my opinion, the largest omission in the earlier versions. For example, in the earlier version, when using the XRef, a response would sometimes come back as so-and-so is the Uncle/Aunt of whomever. With names that are gender neutral, sometimes it was difficult to know if someone is male or female. I find it a welcome addition.

The Family Net window has a menu in the upper window with the remaining screen showing the family network diagram. The menu options are Add, Change, Delete, Join, Go to, Marker, Index, Verify, fill, Xref, Select, Link, Report, Tree, Window, Back, Notes, Events, Print, and Quit. Again, to select, point and hit (with whatever device is being used) or press the first capitalized letter. Another new feature is how relationships are entered. Version 3 asks if the person being entered is the son/daughter, husband/wife, mother/father, sister/brother or none to the previously entered name.



When your database is created, it's a good time to go through the commands to explore their offerings. Whenever you select a command, a window appears. The windows are divided into three sections. The top consists of three buttons, the left allows the window to be moved to another location on the screen. Selecting the middle (the window title) allows you to change the window color scheme. The right is an ESC button. The next section has OK, Layout, and Cancel. Layout is to configure the output, by asking for the length of page, top margin, bottom margin, normal width, condensed width, and multiple columns. The third section allows parameters pertaining to the command to be modified.

For an example, I've selected *Index*. This prints an alphabetical listing of the database. One change has occurred in the newer version. Where the past versions offered either an alphabetical listing or a chronological listing, QL-3 only offers an alphabetical listing. To me this is inconsequential. Someone else may find this a major loss. The bottom command line has Scroll, Page, Line, or Quit. These are different ways of moving about the index listing.

Go to asks what reference number you want and highlights the corresponding name. This is a handy option if you need to move around the tree, for example using the Xref command.

If you don't know the reference of someone you're looking for, use the *Select* option. Again, you're presented a window similar to those previously described. The top line is identical, the bottom section asks for Given name, Family Name, Year, Markers, Status. The year option limits the time period of the search, and markers can be inputted to further limit the search. Status offers more limitations, with Heads, Parents, No Issue, and All. One feature I like with Select is for the names, there is a button called Pick. This lists all in that category that is in the database, for example, all the given names. The middle section of the Select option window is Goto, Print, and Quit. Goto and Quit are obvious. Print outputs to screen or printer the Selected List chosen.

Join is another important option. This allows you to put a relationship between two people. Highlight the first name of the relationship and then select Join. The Aux Family Window then appears. This is identical to the Family Net Window. On the Aux window, select the name you want to join with the first name selected. This has a Select option that was described above. After the second name is selected, hit OK. Another window takes the place of the Aux window, asking you to select the type of relationship of the second name to the first one. Note: The Window command also selects the Aux Family Window.

QL GENEALOGIST 3 - (CONT'D)

Verify allows housekeeping to take place. This option checks the integrity of the data. A good example, as given in the manual, it checks that the same person is not both a mother and father and that the age gaps of spouses and parents/children are reasonable. A 'V' marker is added to all people with warnings. For those familiar with QLG, version 2, this is similar to Test.

Another new command is *Back*. This merely allows you to move through the Family Net, either back or forwards.

The Ancestors and Pedigree Reports are the same as in the previous versions of QLG. Two other reports are Birth Brief and Family Table. Birth Brief diagrams a person's ancestors dates and places of birth, marriage, and death. The data for this report comes from the research data. Family Table gives a generational diagram of the surnames in the Names database.

Index and Family Tree were given their own options separate from Reports. Version 3 allows for easier maneuvering through the Tree than previously, giving a menu bar, consisting of Top, Bottom, Left, Right, Select, Annotate, FileTree (creates a separate tree file), Print, and Quit. I would like to see an up/down scroll here. It's rather awkward trying to move incrementally up or down.

ESCaping out of the Family Net window brings you to the first menu bar. Here you can select Research. As I described this at some length in the Version 2 review, I won't go into that here, except to say the selection process is the same as with the Family Net. All the options available in Version 2 are here again. Under the Research option, Notes are also selected.

The manual deserves special mention. It is very well thought out and easy to follow. It is a 40 page manual that starts out with an Introduction then Installation. A multi-page Tutorial covers all of the important aspects of the program **[DO THE TUTORIAL BEFORE STARTING ENTERING DATA!]** Concepts of the program's layout and the pointer environment are in the next section. Next is the Command Reference section. This is the best addition to the manual. It lists all the commands/options offered in the program, alphabetically, with enough description to give you a good indication of what the command does. Previous manuals had this information, but scattered throughout. Next, comes the Database Conversion, or DEX. The last section tells of the Kings and Queens database included with the program. It has been included with all three versions of QLG. I was going to recommend that an index be added to the manual, but with the Command Reference section, that is not now needed. The version 2 manual could have used one.

Between this review and the one on Version 2, I believe most of the important features of QL Genealogist have been covered. These programs are really extensive in what they have to offer, so I cannot be fully inclusive of everything packed into QLG. My intent is to try to convey the usefulness of this family of programs to the family researcher. Mr. Boutal keeps tweaking his program to surpass his previous version - I thought Version 1 was great! Each version makes it easier to use, as well as adding more features. If you're into the Pointer Environment, I would recommend Version 3. It is easier to use and some of the new features makes it my first choice. If you're not interested in the Pointer Environment, or if you want to save some money, you won't go wrong with Version 2. It has most of the features, and its function key operation works very well.

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Proprietor: Dilwyn Lloyd Jones

ROCK'n'QL

Hamburg, GERMANY - Roy Wood

During a recent phone conversation between myself and our esteemed editor I was asked to write something about how I use my little black box - but before I do that here is a little history. In the early eighties I was singing in a rock'n'roll band as well as learning the beginnings of my current profession as a sound engineer. I do not remember quite where it came from but I found myself in possession of one those early computers - a large aluminium box containing a vast collection of chips and other components. This box took up a large amount of space and did very little at all. I spent many hours typing in Basic programs but, since I had no storage mechanism, lost them all every time I turned the machine off. I was saved further frustration by finding another function for the thing - that of room heater when the power supply gave out and fried several of the chips.

I took the smoking wreck to a friend of mine who was just beginning to start a career in computers and he pronounced it dead. We discussed computers for a while and I explained what I had hoped to do with the corpse that rested between us. "What you need", he said "is the new computer that Sinclair is bringing out - the QL". Sadly I did not have enough money to buy this at the time and gave up on computers for quite a while.

A couple of years later I was sitting in a rehearsal studio in London typing programs into a PSION Organiser II when the owner of the studio said "I've got a computer for sale that you can plug that into" and, yes, the mighty QL sprang into my life.

I used my QL for many years in its basic state. All I had was the computer, a Brother M1009 printer (which I only recently retired in favour of a deskjet) a "steam driven 5.25 disk drive" and the ICE rom and mouse and this set-up together with the ICE drawing program served me very well .

I was, by this time, working full time as a touring sound engineer and I used Quill for writing sound specifications and the ICE drawing program to draw stage plans. Many of the specifications that were sent around the world for people like Steve Harley, Manfred Mann, Donovan, and many others, were composed on my QL. When you tour you are given a little book which contains a list of the venues that the tour is going to be performing at, the stage sizes, power supplies and other details. This is known as the "Book of Lies" because it is often wrong . I had often made notes in them and corrected the mistakes. After a few years of touring I had several of these and I kept them because they had a lot of information that might come in useful but, being in a totally disordered form the information was hard to retrieve- this became my first Archive project.

The revolution for me came in 1992 when I moved to Hamburg, Germany. My girlfriend had an IBM XT which I thought I would learn to use and so I did not bring my QL over with me. Big Mistake. I spent several weeks wrestling with this unwieldy and memory hungry machine (it did not help that the prompts were in German) before I went back to England to rescue my old QL.

Throughout all this period I had continued to buy QL World so I knew the changes that had taken place in the QL market and I did two things that made a vast amount of difference to the way that I use the computer. The first of these was to purchase Miracle's amazing Gold Card - that was like moving from a pushbike to a saloon car and the second was joining Quanta. From then on my QL began to change rapidly. The next things that I purchased were two HD disk drives from W.N.Richardson and I was at last free of the unreliable microdrives.

Inspired by a few articles in both the Quanta magazine and QL World I contacted Jochen Merz software and I began to investigate the Pointer Environment. This, for those of you who have not got into it (are there any ?), is another revolution. QPAC II was a struggle at first because I had only a vague idea of what a Boot file was and no idea about how to write one (this seems to be the biggest hurdle for most people when they first come to the P.E.). Ron Dunnet and Jochen

ROCK 'n' QL - (CONT'D)

were a vast amount of help in this department and I soon made a complete pest of myself phoning people up a writing letters until I could get it all going. The QL community is rather good in this respect - no one I have called or written to has ever complained (to my face at least) and everyone has offered whatever help they could.

My current setup is a JS QL with the Minerva 1.97 ROM and Hermes co-processor (this, although I did not know it at the time, would have cured the terrible problems that I encountered when transferring information to and from the PSION). I have two MGT HD disk drives, the Super Gold Card, a Philips CM 8533 colour monitor, Albin Hessler's SERmouse and the Keyboard-90 PC keyboard and interface from Jurgen Falkenburg. I upgraded to the Super Gold Card because, as soon as I had the P.E. up and running, I became totally addicted to having everything running in the QL at the same time. Until recently I used the Brother M1009 printer and that has never broken down or been unable to cope with a programs output (except QDesign) but I recently branched out and bought the Epson Stylus 800 inkjet printer. This costs about as much as an average 24 pin printer but the results are really excellent, especially when combined with ESC/P2 driver for Text87.

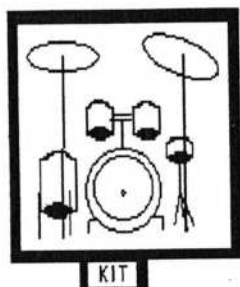
The boot file starts with QPAC I & II and then goes on to give me a string of buttons for Text87, DataDesign, Cueshell, Menuconfig, Flp1_files, Flp2_files, QD, QSpread, a Games submenu, a few utilities from the public domain and a program from the Norwegian group called DM4. This means that once I have turned the QL on I don't have to reset at all unless it crashes. Text87 is a far superior word processor to Quill and I also have the Publishers Pack which provides the ability to include LINEDesign pictures. I can now combine my stage plans with the specification text and print it as one document.

DataDesign is well worth investigating if you use databases. It is both faster and easier to use than Archive and can be programmed from Superbasic. I have transferred my venues database (almost 500 venues in Europe with varying amounts of information on each) to it and after loading the file the access to any record is instant. An even greater advantage is that the file is held in memory so the old Archive problem of corrupting the whole file by not closing it does not arise. Cueshell is also a very useful program. I have three file manipulation programs in memory at the same time and I use them all for different things. The QPAC files function is very good for an overview of the disk and if you have the latest versions of QPAC II and QD6 you can edit or view a text file or Superbasic program straight from the files menu. Cueshell is very good for copying whole disks or sub-directories and will also allow me to change the settings of the mouse and QL directly. The other file program is Dm4 from PM Data in Norway. I bought this program at the QL show in Bielefeld in February and had a lot of problems with it at first. P. Mostand (the author) and I have exchanged several letters and disks since then and I now have a fully working program with a lot of features that the other file programs do not have.

This, in my view, illustrates an attitude that is often counter productive to a market as small as the QL's. I saw the program demonstrated at the fair and was impressed by the handling of sub_directories, the ability to copy a file and change strings as they are copied (good for changing mdv to flp for instance), the amount of information available about the disk and a few other features. When I got the disc home, however, it would not multitask with my system and caused a few problems. PM Data sent several replacement disks after I had described the problems and the author obviously put a lot of work into getting the program to function on my particular setup. A lot of people seem to just give up when something does not work and sling the disk into a box, maybe also writing a complaining letter to a QL magazine but not to the author or supplier. I have found that by communicating with the originator of the program I am either pointing out a bug (in which case the author is glad to have the opportunity to fix it) or I get a better explanation of what I need to do to get it to work or what I am doing wrong (often the case). The QL has multiplied into many different forms since 1984 and it should be obvious that a programmer cannot have every chip, expansion, and emulator to test it on.

ROCK 'n' QL - (CONT'D)

I do all of my accounts on QSpread, the P.E. spreadsheet and so I no longer have to use any of the original PSION programs. One of the major advantages of using these P.E. programs is the Scrap function which I would like to see expanded into more programs. QD, QSpread and LINEdesign will all save text to Scrap and import text from Scrap giving the user a quick way to transfer information between applications.



QDesign kit



LINEDesign kit

The latest addition to my program box is the excellent LINEdesign. I have had a lot of drawing programs and very often found that I had to use two or three different programs to do one drawing because no one program had all of the functions that I needed. When I first got the QL I had QL Paint and Mousart but these were both fairly crude. Once I had moved into the P.E. I bought The Painter which was pretty good (and very cheap) and QDesign which was a good program with an awful manual but LINEdesign is a whole new ball game. There are places where the manual is vague or unhelpful (what manual hasn't got those? I am attempting to help them re-write it) and there are areas where the program does things you don't expect it to but this is a completely different approach to graphic drawing programs and once you are into it the results can be startling. I have had it for a few weeks now and the drawings get better and better. (Compare the two drawings on this page - both produced with a similar amount of effort). When I first got this program I could not get it to multitask at all but I later discovered that it does not seem to like Lightning.

I have never been into computer games where you spend a lot of time 'zapping' aliens but I do like the kind that involve a lot of thought and I have a few games tucked away on my QL. My favourite was QShang but this does not agree with the Minerva version that I have. (I am waiting for TF to fix it. Hint!) The Oracle is very addictive and I often turn to it in the odd moments when I have finished whatever work I am doing at the time. I also have the PSION chess program (available in the Quanta Library) but this has no way to exit back to Superbasic so I have to reset the QL every time that I finish playing.

One last program that I have found very useful is Joe Haftke's Remind_Me_Plus2. This is the last program to be executed on my Boot file and it checks the date and then gives me a list of all the appointments, birthdays etc that fall due in the next month.

The next things that I intend to do are to buy a Hard Disk and to finally take the QL out of its original case and built it into another case of some kind. This will mean that I can finally get rid of those dammed microdrives! I also await the promised hi-res graphics upgrade from Miracle with bated breath.

One last comment. Someone asked the comedian Steven Wright how he was and he said "Not too well actually, I've got a computer virus. I knew I should have stayed with one computer." that makes sense.

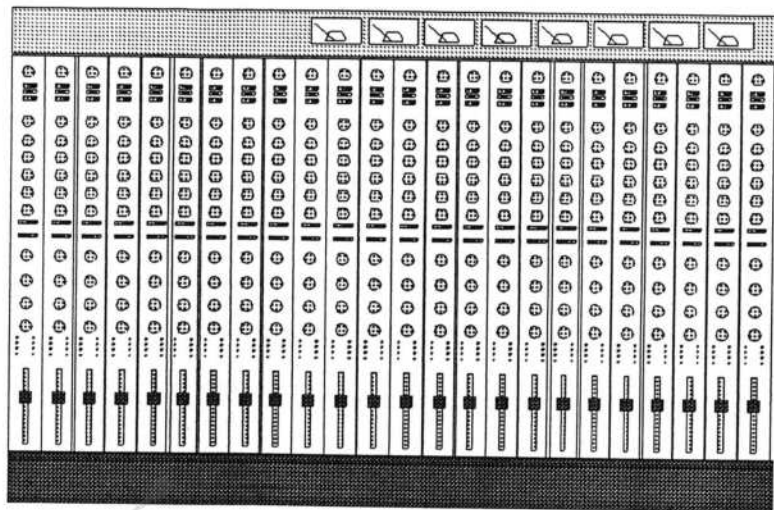
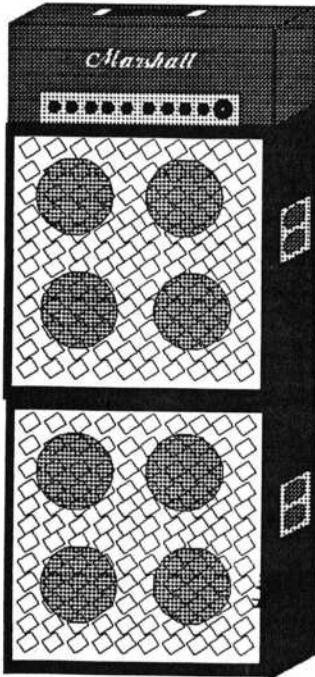
Most of the programs mentioned above were supplied by Jochen Merz in Germany but the following can only (as far as I know) be supplied by the authors :-

ROCK 'n' QL - (CONT'D)

Remind me_plus2
J.J.Haftke,
7, Lansdown Road,
Sidcup, Kent. DA 14 4EF
England
price £20.00 + postage.

Disk Mate 4 (DM4)
PM Data
Nerheim
N-5580 Olen
Norway
Tel: 47 53 76 84 63
(apply to P. Monstad for price.)

DATAdesign and LINEdesign are from Progs in Belgium.



FOR SALE ! FOR SALE!

1. QL with Hermes, Minerva, QIMI Mouse Interface, Keyboard-90 Interface, 796K Trump Card, Dan Elliot modified Coleco power supply. External PC style keyboard and Mouse included. The QL case has a solid top, but will provide the keyboard top. **\$125 + shipping**
2. Microvitec Cub 653 RGB monitor with cable. Works great with the above. **\$50. + shipping**
3. GOLD CARD, I'll pay shipping. **\$165.**
4. 1200 baud Avitex modem, solid and reliable. **\$18.**
5. Seiksha 1000, 9 pin serial printer (direct connect to QL). **\$40. + shipping**
6. Two 720K 5.25" drives mounted in external case w/power supply & cable. **\$40. + shipping**
7. Used microdrive cartridges (most with software). **\$1.25 each**
8. Original QL software and misc. other QL items. Many items for other Sinclair Computers.

Prices negotiable if two or more of the first six items are purchased at the same time. **Contact: Dick Taylor, 309 Holly Circle, Tiverton, RI 02878. Tel: 401 624 2035 after 8:00pm EST week nights or during reasonable hours on weekends.**

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QL Psion Software V2.35 Includes Quill, Abacus, Archive, and Easel IN WALLET £ 18.00
QL Psion Software Separate programs £ 10.00

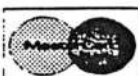
QL power Supply Unit £ 10.00 QL Printer I/F £27 Membrane (and instructions) £ 9.00
TV or Network leads £ 3.00 QL Top & Bottom Case £ 5.00
IC's ZX 8301 £ 9.00 ZX 8302 £ 3.00 8049 (IPC) £ 3.00 MC 1377 £ 3.00

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Cheques - allow 10 days

Delivery:
Carriage - £9
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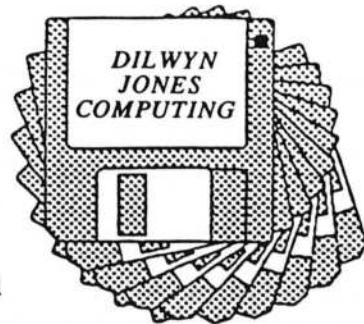
Product subject to availability, E&OE
TEL/FAX: 0494-87-1319

**MOBILE:
0850 597650**



DESKJET-A5

Bramerton, Norwich, GREAT BRITAIN - Sidney Humphreys



Written and marketed by Dilwyn Jones, this program reduces two A4 size pages of text (or American near equivalent), to A5 size, side by side in landscape format. It does this by sideways printing using a Hewlett Packard DeskJet 500 Printer. If the paper is folded down the middle, it makes the sort of pamphlet common in sales literature, church service leaflets, etc. If there are several pages, they can be printed in consecutive order or, alternatively, in the order that the pages would appear if folded as a section of a book. For instance, I used the program to print out a 22 page document. Pages 1 and 22 appeared longside each other on the same page. Turning the page over, pages 2 and 21 were printed on the other side, so eventually, after folding all the sheets down the middle, they read consecutively from 1 to 22. Anyone having to produce a small magazine in A5 format - the QUANTA newsletter for instance, would find this program invaluable.

In addition, four or even six pages in portrait format can be printed in a miniature font on A4 paper, although a strong light and reading glasses might be needed for the finished result.

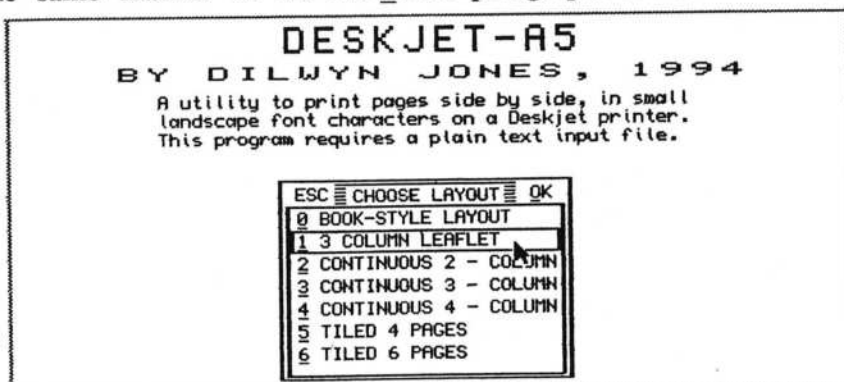
I was asked to review this program because I had just acquired a DeskJet 520 printer and it would be useful to know if it worked satisfactorily with my 520 as well as the 500. I can tell you straight away that it does.

My usual practice when trying a new program, and I'm sure I'm not alone in this, is after a cursory skim through the manual, to load the disk and dive straight into the program. On this occasion however, as I was to put my findings in print, I felt I ought to behave myself, so with admirable self restraint I slowly read through the manual from cover to cover.

I was most impressed by the clear manner in which Dilwyn has set out his instructions. I feel that for once, the beginner should be able to follow the text and understand it. As the software makes use of the Pointer Environment, he gives a remarkably simple explanation of the system and how it works. He covers the Ptr_Gen, Wman and Hot_Rext files which are included on the disk. I confess to giving a hollow laugh when he suggests if you want to discover more, read the QPAC2 manual. (In my local East Anglia subgroup we have had to run a tutorial over several meetings to enlighten those of our members who thought the QPAC2 manual was written in Bulgarian.) Dilwyn also describes the Menu_Rext and Outln_Rext files from the Jochen Merz stable, which again are included with the program, and he even explains the purpose of QLiberator runtimes which are used, so those of us whose knowledge is elementary are well catered to.

I noticed a couple of typing errors in his explanation of hotkey working which might momentarily puzzle the beginner. He shows a hotkey function to load the DeskJet-A5 program using "d" as the selected letter, but further illustrates it with the letter "s". That fickle finger misses the target again in the same manner in the Hot_Pick paragraph. I have a similar undisciplined keyboard on my machine.

A very brief outline of the procedure for using the program is as follows. First, prepare you text file using Quill. Remove the Quill disk and insert the DeskJet-A5disk, but do not load at this stage. In my case, this was to use the printer dat file supplied. My Quill disk held a sophisticated version of printer_dat that would not work here. Then save the file to disk using the PRINT



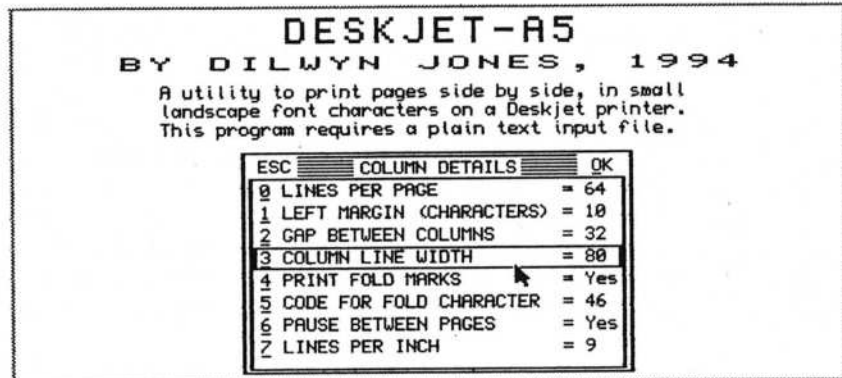
DESKJET-A5 - (CONT'D)

command. (F3, P for print, Enter for current file, Enter for whole), but instead of Enter again for printer, type the filename plus the extension ".txt" or ".lis" instead of ".doc". E. g: "flp2_example.lis". Next quit from Quill and boot up DESKJET-A5. The program is menu driven and a mouse makes selection of the many options quick and easy. When requested for the name of the text file, press F3 and type the driver, filename and its new three-letter extension. The program retrieves it from the appropriate disk drive and goes to print.

There was a nail biting pause of half a minute before the

printer sprang into action, but I found no great difficulty in following the instructions and printing out my text file. Of course, the manual leads you through the procedure in much more detail than in my brief outline and describes the many options available to you.

Obviously this program will have specialised use, but to anyone who has to produce a club newsletter or parish magazine, or even advertising circulars, DESKJET-A5 could be useful and fascinating to experiment with.



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Interactive Workbench (needs 512k)
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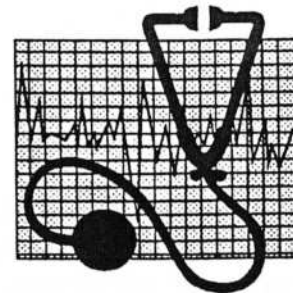
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QL SPIN DOCTOR

Troy, Michigan, USA - Don Walterman



I've always had a fascination with disk drives. I started working on computers 16 years ago when disk drives were actually large enough drives that you could repair them outside of a clean room. I spent many hours replacing and aligning heads, rewriting servo code and all the other jobs necessary to keep disk drives working. Since I've had my QL, that interest in disk drives has followed over to the world of QL disk drives. I'd like to make this a place where all aspects of disk drives on QL computers can be discussed. I do mean discussed because I have many questions of my own about the early disk interfaces for the QL.

Some topics I'd like to discuss would be: the QL disk interfaces - their pluses and minuses and individual peculiarities, how disk drives work, common disk drive problems, tips for how to get more from your disk, toolkit commands for your disk and any questions you might have.

To start things off, I am very interested in what QL disk interfaces are out there. What did you buy, do you still use it, why did you upgrade and what do you wish was available? You can send this information to IQLR at either of its addresses or if you use a modem why not leave me (Don Walterman) a message on the International QL area on QBox. I will get the message on QBox within a few days and it will only cost you the call to your local QBox BBS. I'll publish the results of this highly unscientific survey if enough people send me data.

I would also like to work at documenting the latest known rom versions for the disk drive interfaces. Many of the early disk interface problems were solved with rom upgrades. I'll start things off with what information I have and would welcome your updates, additions and corrections.

Floppy Drives

Miracle Super Gold Card	-	2.47
Miracle Gold Card	-	2.32
Miracle Trump Card II		
Miracle Trump Card (Miracle rom)	-	1.28
Miracle Trump Card (Merz level 2 rom)	-	2.17b
Miracle Disk Card		
Cumana -	-	1.11
PCML - Q+ Disk		
Technology Research Ltd. - Delta Disk Interface	-	1.14
Micro Peripherals		
Medic	-	1.18
CST (Cambridge Systems Technology) QDisc	-	1.18
Sandy Super Q board	-	1.18Y
Sandy Super Q board (Merz level 2 rom)		
Insider board		
DS Enterprises - Datel		
Quest		
MCS (Micro Control Systems) Memodisk	-	1.7

Hard Drives

Miracle	-	2.08n
Jürgen Falkenberg - QL-HDD	-	3.07
Dirk Steinkopf - QL-Harddisc	-	2.55
Rebel		

As you can see, there are lots of blanks that I could use your help in filling out.

QL SPIN DOCTOR - (CONT'D)

Are you looking for a good source for floppy disk repairs? I can personally recommend ISR (Infinite Service and Repair). I have shipped them a large number of drives. They fixed 11 out of 13 for \$15 each. The other two would have cost more than a new drive to repair. The cost to check out a drive is only \$1. A friend of mine also has had similar results with ISR. They are fast, reasonably priced and provide a 6 month warranty. The only caution is they are used to repairing PC and MAC drives. They have had some problems fixing 5 1/4" Quad (720k) disks. These are very rare in the PC world (not supported by MS-DOS) but were quite popular on the QL. If you use standard 3 1/2" disks you can't find a better repair service. Their phone numbers are (800) 458-6778 or (512) 259-3444.

My turn to ask some questions. Does anyone know of any rom updates to the MCS Memodisk interface that will make it compatible with other QL disk interfaces? This is an interesting interface that contains 512k of expansion memory, a disk controller and a parallel printer port. Does anyone have an eeprom (or copy of the code on disk) or gal for the PCML disk interface? I am also looking for copies of the manuals for the PCML Q+ disk or CST Qdisk interfaces.

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**There is no charge to use QBox-USA other than the cost of the phone call. Please give us a try!
We're looking forward to seeing you online!**

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IQLR LIBRARY

As we mentioned in our last issue, IQLR is in the process of building a library of FREEWARE, PUBLIC DOMAIN and SHAREWARE software. The purpose of the library, is to offer very good software to our readers who may not have access to them via the QL related Bulletin Boards at a modest fee.

The price per DD disk is \$2.50 US, HD disk is \$3.50 US and an ED disk is \$5.00 US. Prices includes the disk and postage in North America. Overseas readers add \$1.00 to cover increased postage costs. All disks are 3.5". The following disks are now available:

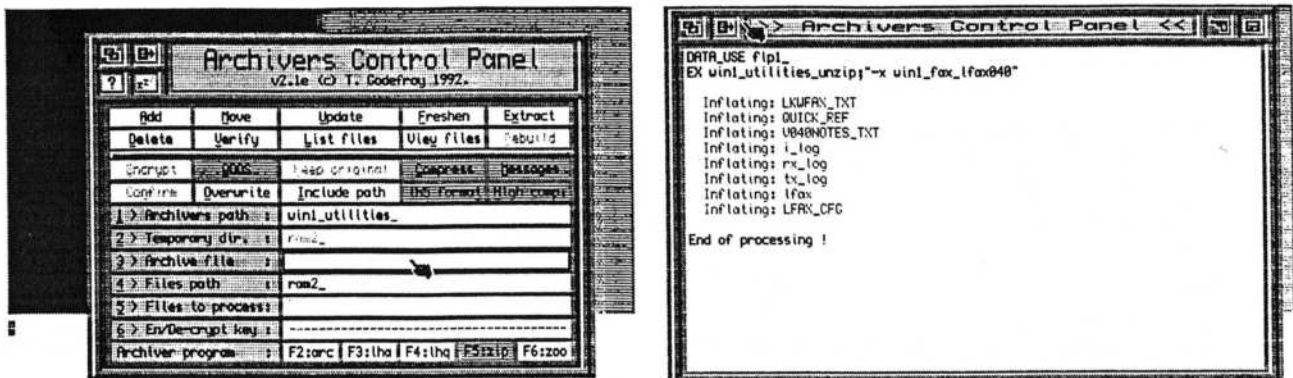
Mine Field - Mine Sweeper type game <i>(reviewed elsewhere in this issue)</i>	1 DD disk
Archivers Control Panel - designed to ease the use of ARC, LHA, LHQ, ZIP, ZOO	1 DD disk
Diskutil - QL disk utility program	1 DD disk
QL-BBS Message Reader - CompuServe message formats w/QBOX filter	1 DD disk
QFAX - Jonathan Hudson's class 2 fax modem software	1 HD disk
QFAX & LFAX - class 1 and class 2 fax modem software <i>(class 1 requires the use of both Qfax and Lfax)</i>	1 HD disk

The following is a brief description by Don Waltermann of the three packages that are drawing a lot of interest lately.

ACP version 2e1

Archivers Control Panel is a front end to make working with archive files easier. This program is a must have if you ever need to unzip a large program. It supports the most popular QL archive programs including Zip/UnZip, Zoo, LHarc and Arc. This version now includes an English help file. ACP can be configured with Config or Menuconfig.

ACP requires the Pointer Environment. This is a program you will use often if you ever download files from a BBS. T. Godefroy is the author of ACP.



(Editor's Note: We feel this program is of such importance that we have included the two screens above so that you can get an idea as to how it functions.)

IQLR LIBRARY - (CONT'D)

LFax version 0.40

Lester Wareham's program to get class 1 (USRobotics and others) type fax modems to work with Jonathan Hudson's QFax program (QFax directly supports class 2 fax modems). I have started receiving faxes with LFax. Now you can say "send me a fax". Requires QFax, a fax modem and Hermes. Lots of memory and a fast QL are recommended. Minimum working configuration is QL, Trump Card, Hermes and a class 1 fax modem.

QFax version 1.80

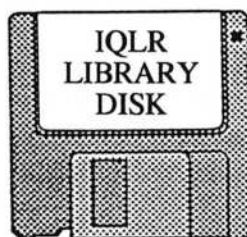
Jonathan Hudson's program that proves you can send or receive a fax with the QL. If you have a class 2 fax modem (Zyxel or similar) this is the only software you need. If you have a class 1 fax modem (USRobotics or similar) you need this program as well as LFax. QFax does not require the Pointer Environment. However, some of the fax viewing software included with QFax does require the PE so it is strongly recommended. Basic hardware requirements are QL, Trump Card, Hermes and a class 2 fax modem.

Editor's Note: often times we're asked for the definitions of Freeware, Public Domain and Shareware. To our understanding they are as follows:

FREEWARE - The programs can be freely distributed while the author retains all rights to the program.

PUBLIC DOMAIN - The programs can be freely distributed and the author abandons all claim to them.

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Mine Field

Hubber Heights, Ohio, USA - Tim Swenson

While checking the QL Anonymous FTP site, maya.dei.unipd.it, in Italy, I ran across a program called Mine Field. All I saw was a file name, so I downloaded it to my computer for further examination.

Once I got the file to my QL and unzipped it, I found out that what I had was a QL version of the MicroSoft Windows game, Mine Sweeper. Mine Sweeper is a game where you try to find out those squares that don't have a mine and those that do. The score is based on the time it takes you to figure out the puzzle. If you hit a mine, you are dead.

The neatest thing about the game is that it is a Pointer Environment (PE) game. It was written to be run under the PE and uses it well. As a new PE user, I ran across this game at the right time. I used QPAC 2 to list the files on the disk, select Mine Field, and execute it. Once it started, it behaved as a full PE program. I could move it, put it to sleep, etc.

The game is a genuine port of the Windows game. It works in exactly the same manner. Having played the Windows version, learning to play the QL version was very easy. Mine Field has four levels of play; Beginner, Intermediate, Expert, and Custom. The higher the level, the more squares are on the board. I have not tried the Custom level. I'm guessing it will let you set the size of the board and possibly the number of mines.

MINE FIELD - (CONT'D)

Like other PE programs, the cursor changes as the cursor moves around the program. One neat feature of Mine Field is that when you die, the cursor turns into a Skull and Cross Bones (the poison symbol). Kind of adds a nice touch.

Not being a big fan of the game, I can't rave too much about how well it plays. But I can rave about how good a PE program it is. And the best thing about the program is that it is Freeware. The program is written by Phillippe Troin of France. A big thanks goes out to Phillippe for writing such a great program. I know that the PE is not an easy environment to program in (like most GUI's). A large number of hours went into this program, and it really shows.

If you are a PE user, I heartily recommend getting this program. If you are not a PE user, take it from a old bare-bones QL user, it's really a neat step up.

QL Data Acquisition System

Troy, Michigan, USA - Don Waltermann

I wish this was a review. Unfortunately it isn't because this interface is no longer in production. What if we could convince the manufacturer to put it back into production? That's what I thought when I ran across some articles on this board. This card was only advertised for a short time in QZX (a newsletter that supports Sinclair computer users that also are interested in amateur radio). Since QZX did not reach many of the QL users, I thought I'd contact Prairie Digital and see if they would produce some more boards. The President of Prairie Digital is Tom Hartmann. The following quotes are from Tom's letters to me (used with his permission):

"Don-- Wow, I haven't heard the QL mentioned in years.

We still have the artwork on file, but sold the last QL pcb probably about 3 years ago. Does the QL still have some loyal users?

I thought you might be interested in the history of the QL Data Acquisition System. When I designed this board it was for use with a large outdoor moving message display system. In fact, the board measured the temperature and controlled 224 incandescent lamps.

An earlier version I designed used the Timex/Sinclair 1000 for the controller! So, when the QL came along, I redesigned it for the QL. By the time I was ready to start the software development, I realized the QL was not going to be around long. So, I placed several ads for the control board as a general DAS.

Our moving message displays are now powered by a 386 but truly the QL provided all the power necessary when running a machine code program."

When I told Tom about the latest QL developments he offered to put the interface back into production. He will make another production run if we can provide him with an order for at least 25 boards. The cost will be \$30 each for the bare board or \$79 each for a complete assembled board. I have begun taking orders. I am not collecting money, just finding out if there is enough interest to justify another production run of this card. I would like to hear from individuals and dealers that are interested.

By now you probably are wondering what in the world is this card I'm talking about.

The specifications are:

- 24 lines of programmable I/O
- 8 channel - 8 bit A/D converter
- 12 bit counter
- Plugs into the expansion connector (no thru port) double-sided circuit board with plated thru holes can be controlled from SuperBasic or machine code.

QL Data Acquisition System - (CONT'D)

A four part review can be found in the March, April, June and July 1989 issues of the QZX newsletter. To summarize the QZX review, it said the board was surprisingly high quality for the price and compared favorably with PC based boards costing over \$300.

My plans for this board would be to turn a bare board QL, toolkit II rom and this data acquisition system into a very low cost weather station. I'll need the toolkit II rom to network it to my main QL. The weather station will not need a keyboard, monitor or disk drive. I have found thermistors (used to measure temperature) and photodiodes (sunrise/sunset/clouds) are very cheap and available from a number of surplus catalogs. The weather station QL could download its simple program from the main QL. It could then take sample readings at some interval and store them to ram disk. On a daily or weekly basis the main QL would simply need to get the file from the remote ramdisk over the network. At this point the data could be loaded into your favorite spreadsheet or graphics program.

Other applications include a digital voltmeter, moving message display and most anything that requires communication with the real world.

Please let me know if there is enough interest out there in the QL community to get this board back into production. I would love to surprise Tom with an order that shows him the QL is still alive and kicking! Please don't contact Tom directly unless you plan to purchase 25 boards by yourself. He does have to run his business at a profit...

I can be contacted through IQLR or write to : Don Waltermann, P.O. Box 176, Troy, MI, USA 48099-0176.

Cueshell

The desktop program for all QDOS compatible systems

Cueshell is a graphically oriented desktop program, that is the program options are presented on the screen and the user has only to point at the option, normally with the mouse, to initiate the desired operation.

In practise this for instance means that to copy a file, the file is marked and then the target is simply pointed to. The destination (or a part of it) must simply be visible.

Cueshell is based on the Pointer Environment, a system extension which implements mouse pointer, menu structures and Hotkeys. The Pointer Environment comes with Cueshell.

Cueshell is intended to offer easy access to all everyday tasks on the computer. Cueshell is very fast, as it is completely written in Assembler, and runs on every extended QL.

Cueshell is the first choice desktop program for all systems with built in level 2 device drivers:
• flp level2 • Gold Card • QXL • Atari emulators including QVME •

Being a graphically controlled program, Cueshell offers features not available to QDOS until now:

- Dynamic catalogue window control • Up to 16 catalogue windows can be open •
- Object oriented file management, e.g. copying complete directory trees • Easy file rename (just type new name) •
- The form (position, size and sort order) of a catalogue window, can be saved and restored for any directory separately •
 - Additional file attribute control, write protect and invisible • User friendly configuration from within the program •
- Very comfortable view window with option to make _doc files easily readable and scrolling files forward and backward •

Cueshell costs DM 100.00 (£ 40.00) and is available from Dilwyn Jones Computing, Jochen Merz Software or directly from us (eurocheques only)

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QReview

ISSN 1351-1343

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The reference guide to QDOS and its derivatives

Volume 0 Issue 0

1994



— NEWS —



QReview (ISSN 1351-1343) is a magazine devoted to the QL and its derivatives. It is produced entirely on the QL by a dedicated team of QL enthusiasts. The magazine regularly contains articles suitable for the beginner, tinkerer and expert. There are articles on programming in SuperBasic, C68 programming, machine code programming, updates of programs released in the public domain and of course the latest news from around the world. Independent reviews of QL software also feature prominently. A new regular feature is the Help Desk, in each issue readers hardware or software questions/problems are answered in the same issue.

QReview is published, at present, four times a year and costs £2.00 (UK), £2.50 (Europe) and £3.75 (any other country) per issue including Postage and Packaging. A four issue subscription to QReview costs

£8.00 (UK), £10.00 (Europe) and £15.00 (any other country). Each volume contains four issues.

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Currently working on 2 new products for the QL as follows:-
QUBIDE: IDE Hard Disk Interface. Will allow connection of an IDE Hard Disk upto 120mb to the QL. Software built in. Plugs into QL's ROM slot.

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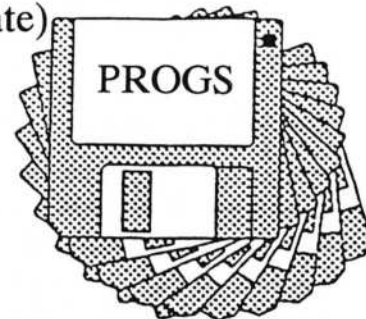
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PROforma (Vector Graphics/Fonts on a Plate)

Santa Clara, California, USA - James D. Hunkins



Software Summary

PROforma itself is a Font and Raster Manager program from PROGS. What you get when you buy PROforma in this package is the actual PROforma program and access to PROforma through a library of functions. If the programmer is writing their code in either 'C' or assembly (not interpreted SuperBASIC), they can use the PROforma program through these routines within their own code to display high quality vector fonts and graphics with a 'minimal' degree of effort. Different printers and screen resolutions are handled transparently to the programmer by the included drivers.

Some possible software that could use PROforma libraries would be (PROGS suggestions) desktop publishers, word processors, business graphics, (some extra ideas) label makers, greeting card makers, and font managers. PROGS has so far released four programs of their own that use PROforma; LINEdesign, PFlist, PFdata, and PFb2pff.

Introduction - concepts and why

With the introduction of LineDesign vector graphics program from PROGS, the QL world was introduced in a big way to vector fonts and graphics. Anyone who has seen or used this graphics program knows the power of vector graphics and fonts. For everyone else a short description is appropriate.

Graphics were originally only bit mapped on the QL. This means that if you drew a picture with a graphics program, it stored the image in a way that directly corresponded to the pixels (dots) being displayed on the screen. Additionally, text on the screen was generated from a bit map that was stored for each character. While this is a simple and fast method to do graphics and fonts, it does have major draw backs.

When you want to change the image to a different size either on the screen or on paper, image detail suffers. If you blow the image/text up, each existing pixel in the original picture must become more than one pixel. If you have anything other than vertical or horizontal lines, this will cause a jagged effect along the new lines. If you shrink the image/text, some pixels have to be thrown away. This will usually mean lose of detail, in a way that doesn't always preserve the original image.

Also, when you rotate or do other 'neat graphical manipulations', quality can suffer. Any line which was originally horizontal or vertical may become slanted and jagged.

The answer to this, especially with the faster QL cards and systems available today, is to use vectors to store the image and fonts. Instead of mapping the image pixel by pixel, information is stored that can be used to recreate the original image. Lines are stored with items like first point location, length, width, and color. A circle can be stored with center point location, radius, width, color, and fill pattern/color. Such data structures are created for anything that you can draw.

When changing the size or perspective (angle, distortion, etc) of the original image, the new image is created from these data structures, allowing the image to be displayed with maximum resolution of the display device and with the least distortion possible for that device.

The disadvantage is that the items being drawn must be calculated each time they are drawn or moved. But again, with the faster systems that we have, the calculation time is not as massive and is a small price to pay for the professional quality that graphics and fonts are now capable of.

PROforma - (CONT'D)

What it is

The software package includes documentation on an extensive library of routines that manipulate and display fonts and vector graphics. These routines can be included in a 'C' or assembly language program. Several files are included which are linked into your program when it is compiled. The included PROforma program must be running when you run your compiled program. This same PROforma program can also be obtained with several other programs such as LineDesign and PFlisT. This means that if someone owns one of the other programs that comes with it, your program will also run on their system.

You will also find that since the PROforma program holds most of the code to handle the graphics and fonts, your compiled/assembled program will be that much smaller. By allowing several programs to share the same resources through PROforma, it saves both program space and system memory.

Documentation - technical, usage

Documentation is always such a fun subject and when it concerns using library routines concerning a discipline that most people are not deeply versed on, it becomes a critical issue. In fact, with software such as this package, it can make or break it completely.

With just a few oversights and shortcomings (will cover them later with additional details), I am happy to say that PROGS has done a better than average job in the supplied documentation.

The manual is broken down into seven sections; Introduction, PROforma Concepts and Imaging Models, Graphics, Font Management, PROforma sessions, Operators, and Examples. Following is an overview of what each of these sections covers.

Introduction: this is the standard 'Hi, how are you. Thank you for buying this. This is what you get. And, oh yes, here is the legal mumble/jumble.' It is short, as it should be.

PROforma Concepts/Imaging Model: My highest praise goes to this section. As I have mentioned, most people are not 'deep' into graphics. Sure, just about anyone can get lines and circles to draw on the screen, mixing in a few words and maybe special effects here and there. But it becomes a whole other issue when you are trying to create graphics and text that scales to multiple screen resolutions, printer qualities, and different hardware. For example did you know why the same image looks different on different types of printers. Perhaps you might want to understand two different types of fills, or about image transforms, or even font kerning?

Before you panic and say that this program is too much to handle, I will say that the included library routines do ALL the hard work for you. The Concepts and Imaging Model sections take up just 12 pages and give an excellent and BRIEF overview of some basic concepts that will help you understand what the different functions are actually doing. It also includes a sprinkling of useful illustrations whenever they can clarify the written word.

I found that by reading through this section, then playing with some of the samples, and then looking at it again, a lot of things starting making good sense without a lot of sweat and tears.

Graphics: This section (10 pages) breaks the graphics functions into functional groups and discusses how each is used. This is a must read section as it ties everything together. I found that when I had a rare problem with something unexpected happening, a quick review here usually made me hit my head and wonder where my brain was. The discussion is kept on the overview level, with gory details such as syntax saved for later.

Font Management: Since there are so many library functions, PROGS separated out the font functions and placed them here (6 more pages). By the way, you don't have to use all the

PROforma - (CONT'D)

functions to make things work. But you can be assured that just about anything you might want to do can be found in a function somewhere.

PROforma Sessions: I suspect to many users, this might be the most confusing section. I personally took one look at it and quickly turned to the examples. Now that I have scared you, relax. Since the PROforma functions interact with each other and exist in a multi-tasking and shared environment, funky things can happen if you don't follow the rules. Up to this point, some basic rules are emphasised in the manual. What this section does is give an outline of a common procedure that can be used. Call it a template if you will. For people into computer science, it might be considered an informal syntax/procedural graph (but in words).

Once I had looked at the examples and then referred back here, it actually made sense. I suspect that I will primarily use it to check for 'what I did wrong' type items.

One word of caution does apply. As PROGS explains it in their manual, PROforma was written to run efficiently. Read "robustness is not one of PROforma's strong points." I am quoting the manual and am doing so not as a criticism but as a caution. Yes, PROforma is fast and efficient. And since it is designed to be compiled into a program and surrounded with your code, it is a reasonable trade off to expect you to follow the rules (they are very simple) and to do your own error trapping. Especially since you do error trapping anyway (you do, don't you?). I do commend their pointing this out and appreciate the speed the trade off probably gives the software.

Operators: This is basically the reference section. Most of the functions are listed here. Please note that a few functions were left out of this section but can be found in the Graphics and Font management sections, along with the examples which will give the syntax required. Refer to the 'Problems' section for three of the functions and the description supplied by PROGS.

This section is the place that the technical details of each function call are given. This includes a short action summary, a prototype line, parameter information, and errors given. As far as technical sections go, it is fairly complete. But you will need to read the other sections before using the calls. The concepts and usage given elsewhere is as important as the technical items.

One little side note, PROforma uses a different type of number representation to speed things up. It is called Fixpoint and is very simple to understand. A short explanation is given in this section, recommended reading for this and other applications.

Examples: The final section is a very short explanation of the included examples. This is the one part of the manual that falls short. The examples are actually short test code that PROGS used to test different functionality out. This section gives a very brief description of what each does. However, it is up to the user to look at the example source code (included on the disk) and step through them by his/herself.

Using PROforma

As you should have a feel for now, PROforma gives a lot of capability for high quality graphics and fonts. It includes fairly comprehensive documentation and should be fairly straight forward for most moderately experienced programmers to use. I did find that some explanation was missing in how to get things going in the manual, but found that by looking at their included 'MAKEFILE' and the 'PROforma.h' include files, things were not too hard to figure out. To save you some time, I will step through some of the things I discovered.

Setup and Use: As my time is limited and my programming preference is 'C' (C68 to be explicit), I will proceed by looking at 'C' only. Please note however, that there is ample information included, between the manual and some of the included files, to use this package fairly easily from Assembly and most other compiled languages. Some of the information I will give here will also apply to other languages, so please stay with me.

PROforma - (CONT'D)

First of all, you should look at the included MAKEFILE to see exactly how they compiled the included 'C' examples. This file is straight forward and shows what options were used when linking (again, the options they used are 'C68' based).

You will need to copy the include file (PROforma.h) to your normal 'C' include directory or location. You will also need to link in three files to your code; 'PFcall_rel', 'PFlib_o', and 'fixmul_rel'. The two 'rel' files have their 'asm' source files included for your viewing. The 'o' file also has its 's' source file included. These will be especially useful to the none 'C' programmer or to any hacker out there.

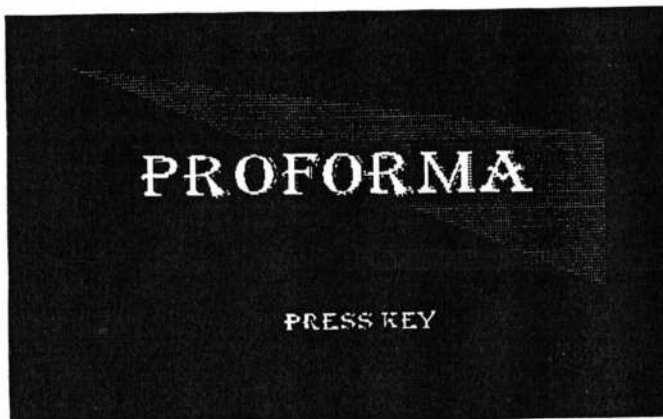
NOTE: Future versions will have these three files combined into a file named 'libpf_a'. It can be used instead by using the -lpf flag when compiling your program.

If you have copied the 'h' file to the include location and the other three files to the location where your source code is, you are almost ready to compile an example or your test code. To compile an example, copy 'MAKEFILE' and the example source code to your current location. Now, if you have 'C68' set up to run from this directory, simply type 'EX make;example_program_name'. Do not include the "c" suffix in the name. I am assuming that you have TKII or equivalent running on your system for this last command line to work properly.

If you want to compile your own program, either name it the same as one of the example files and use the same 'MAKEFILE' or adopt the included 'MAKEFILE' to reflect your program's name, and any special parameters you might need.

Everything should compile fine. If you have already loaded PROforma as per instructions (see the manual for this), go ahead and execute your program. Wow, didn't know that you were that good of a programmer (or did you?).

Example: I have included a very simple program that generated the screen shown in this review. Please note that it is just a simple example designed to give you a quick feel for what programming with PROforma entails and to illustrate the easy use of the library functions. Also note that the entire program contains only 40 lines of code and comments. Everything else is handled by the files linked into it and by PROforma running as a Thing in the background. All very simple and neat. Reference the line numbers (not included in the real code) during the following discussion. I will skip the lines that hold standard 'C' type functions.



```
1 /* PROforma, PROgs FOnT & Raster MAnager
2    PROforma demo - graphics and font */
3
4 #include "PROforma.h"
5 #include "qdos.h"
6 #include "stdio.h"
7
8 char _prog_name[] = "PROforma demo";
9 const short title[] = {'P','R','O','f','o','r','m','a',0x2026,0 };
10 const short exit1[] = {'P','r','e','s','s',' ','k','e','y',0x2026,0 };
11 void main()
```

PROforma - (CONT'D)

```
10  {
11  Gstate gid;
12  short c; char t[80];
13  int i;
14  pt x,y;
15  char ch;
16  if (InitPROforma()) return;
17  gid=PFInitGstate(0, "scr", 0,0, short2pt(720), short2pt(540), &c);
18  PFLoadFont(gid, "Algeria");          /* load and select font for program to use */
19  PFSelectFont(gid, "Algeria");
20  PFClearPage(gid);                  /* clear page */
21  PFPATHFILLED(gid);                 /* all paths to be filled */
22  PFDeviceColour(gid,3);             /* black - opt */
23  PFGrayShade(gid,short2pt(30));     /* 30 % gray - opt */
24  PFMoveTo(gid,short2pt(72),short2pt(72)); /* set starting point */
25  PFLineTo(gid,short2pt(648),short2pt(168)); /* draw line to new point */
26  PFRline(gid,0,short2pt(200));     /* draw line to relative point */
27  PFClosePath(gid);                 /* close path for filling */
28  PFPATHDRAW(gid);                  /* draw path on device (scr) */
29  PFDeviceColour(gid,3);             /* black */
30  PFGrayShade(gid,short2pt(100));    /* 100% gray */
31  PFScaleFont(gid, short2pt(90));    /* scale font to 90% */
32  PFMoveTo(gid, short2pt(145), short2pt(240));
33  PFShow(gid, title);
34  PFScaleFont(gid, short2pt(35));    /* scale font to 35% */
35  PFMoveTo(gid, short2pt(300), short2pt(420));
36  PFShow(gid, exit1);

37  ch = getch();

38  PFRemoveGstate(gid);
39  FreePROforma();
40  }
```

Listing 1: Short Demo Program for PROforma (see Screen 1)

Lines 3 to 5 are standard 'C' include lines. 'PROforma.h' contains the types and definitions required. 'qdos.h' is standard for running most 'C' programs on a QL, and 'stdio.h' is included for the getch() function used.

Line 6 sets the program name for use by the pointer environment. Lines 7 and 8 define the strings to be written out to the screen in the format that PROforma expects. The format is 'unicode' (2 bytes per character) which allows for a character set of up to 256 characters. Normal ASCII characters (single bytes) only allow characters sets up to 128 in length. Unicode is discussed in the Operator/Strings section of the manual.

As mentioned before, PROforma depends on a structure called a Gstate that holds the current information on what it is doing. A Gstate location is reserved in line 11.

Line 16 links this program into the PROforma thing. If PROforma is not currently running, it will return a value of FALSE and this program will exit.

The Gstate is initialized in line 17. It is set up for, in this case, the screen with driver 0 (screen driver always is driver 0), and with full screen (device) size. Currently the display size maxes out at 720 x 540 points (about a 12 inch monitor). This is regardless of the resolution of the device.

PROforma - (CONT'D)

In line 17 you will also notice the function `short2pt()`. As PROforma works in Fixpoint numbers for speed, a series of simple macros is included to convert them to and from integers. Take a look at the file 'PROforma.h' for more details on the included macros.

Before you can use a font, you have to load it. Line 18 does that and links it into the current Gstate (`gid`). Normally, you might check first to see what fonts are available and pick one. Functions are included for these. However, this is a demo so I took a shortcut. Interesting, if a font is not available, the program does not crash. It just won't print. I could have also checked to see if it loaded correctly. An error code is returned from most functions to let you know if anything went wrong. Again, being a quick demo, I took a short cut here and did not check for errors.

You can have several fonts loaded if you want. This takes up a bit more memory but is convenient. Before you can print with a font you will need to select it, as is done in line 19.

Lines 20 to 23 tell PROforma to Clear the Page, Fill all paths (there are two Fill methods available), set the color to black (currently supports the four colors of QL mode 4 only, see things to come), and to shade the fill at 30% (handles 0 to 100%, depending on the driver's resolution as to quality). These commands stay in effect for all drawing commands until changed.

Now, to build a path. This is done in memory first. This method seems to make the drawing more 'seamless'. Lines 24 to 26 draw a triangle on the screen. `PFMoveTo` sets the starting point to 72x72 coordinates. `PFLineTo` draws a line from the set point to the coordinates 648x168. It also resets the starting point to the new coordinates. `PFRline` draws a line from the starting point to a new point 0,200 from the starting point (relative positioning). It then sets the starting point to the end of line coordinates.

To finish the path, the program closes the path with `PFClosePath` in line 27. This is only a safety here as all paths must be closed to be filled. I could have left out the last `PFRline` command and let this command do the job for me. However, despite the briefness of the demo, I do like to be complete and avoid surprises.

Line 28 will physically draw the path I just designed onto the chosen device (in this case the screen).

Now for the text. The font has already been loaded and chosen. In lines 29 to 31 the following are set; color (black), shade (100%), and scale (90%). Line 32 sets the point to start the text at position 145x240. Line 33 displays the unicode string previously set up as 'title'.

And now to add a second line of text at a different position and size (scale). Lines 34 to 36 do this.

When done with a Gstate, it needs to be removed and have its resources freed up. This is done in line 38. Note that Gstates may be opened and closed more than once in a program. You might need to print out something or want to have more than one set of paths being drawn on a device at a time. Each instance would use its own Gstate.

Finally, when done drawing or font displaying with PROforma, you need to release the link between your program and PROforma, as is done in line 39.

Room for Improvement

As with any software that has any real value, there are always capabilities to add and improvements to be made, even if it is bug free (if there such a thing).

PROforma - (CONT'D)

The review copy I have (Feb 2, 1994) discusses several things that PROGS is working on to enhance PROforma. In addition to the always and never ending efforts to add speed to an already fast set of functions, they discuss improvement in the fonts, especially when displaying them at small sizes. For those familiar with Adobe Type I fonts (similar to PROforma fonts), improvement in the hinting mechanism and hints in the fonts might mean something to you.

Also note that the PROGS program "PFb2pff" (not included) will allow you to convert Public Domain Adobe Type I fonts for use with PROforma.

Currently, only the screen device supports color, and is limited to 4 colors. In the manual PROGS discusses supporting full color for use with high quality color printers and probably with the new improved color graphics on the way for the QL.

A few other bits and pieces mentioned are adding dashed lines, variations on line caps, line joins and possibly calligraphic lines. Finally, at PROGS they are even dreaming about using things such as bit blitters on the more powerful QL host systems, such as the Atari. Mention is made of using floating point and other more efficient commands on 68030 or higher processors.

NOTE: Since my review copy came in, I received a review copy of PFlist. It included an update of PROforma. I can say that when I used PFlist to display 8 point fonts (small) on my printer, the font quality was very good. The print drivers are also now external from PROforma, which means that others can be easily added without having to replace PROforma. The new version worked seamlessly with my test PROforma 'C' code and seemed to incorporate the improvements without my having to recompile my code. Such is the power of 'Thing' extensions on the QL.

As to what other changes were made, it is hard to tell. But this illustrates the dedication of PROGS to continuously improve their programs, and to maintain backwards compatibility.

As always, there is always something to find that could be improved. The software, I am very happy to say, seems to be fairly stable and clean and while the documentation is far better than most, I would like to suggest a few areas that would help.

NOTE: When doing the review I ran into some questions and faxed them to PROGS. They responded in a short order with answers to several of my questions. Again, support is the bottom line on software like this (please though, play with any software for awhile before you bother the authors. After all, they are busy cranking out more stuff, so respect their time too!).

I found three function calls that were missing in the Operators section of the review copy of their documentation. I am including their faxed explanation here for your convenience.

InitPROforma: This must be done prior to any use of PROforma, to establish the link between the owners job and PROforma itself. After this command, you can start using PROforma.

FreePROforma: This must be done, when the job has finished using PROforma. Both commands are intended to be done only once during the execution of the program. At the beginning, when you can start using it, and at the end, when you are sure you won't use it any more.

PFInitGstate: This command will initiate a graphics state, and will allow further work. This also has to be done, BEFORE any real drawing or any operation can happen. Most commands need as a parameter the Gstate anyway. The PFInitGstate will happen more often, as printing on a device, will need a new Gstate, which is released after printing. It can be re-initialised later on, when you need it again.

PROforma - (CONT'D)

A short discussion on the include file (PROforma.h) would have saved some effort. However, any 'C' programmer should be able to look at the PROforma.h file and understand it. Also, three other files are included which have to be linked into the program. Little was mentioned in the documentation, but here again is the answer from PROGS. Also note, you might want to look at the source files (included) as they also supply useful information.

PFCall_rel : an assembler file, which interfaces 'C' to the PROforma-thing.

fismul_rel : an assembler containing the "fixmul"-command, which is used to multiply two variables of the "pt"-type that is used in PROforma. This is a fixed-point integer, chosen to combine accuracy and speed.

PFLib_o : This is a C-file, which defines all the C-functions that can be used to call PROforma commands.

Only two more suggestions to be made. The first is that a short discussion on how to set up and use the functions in a 'C' or assembly program would be useful. By looking at the included MAKE file, I found the information I needed without a real problem.

The last documentation improvement I can suggest would be in adding more information to their included examples. As mentioned before, the examples are actually short test programs that PROGS uses. As it was, I have been able to compile and run all but two so far (had to quit playing and get this review done, else I probably would have those last two figured out by now).

Again, all of the above are minor nits. The 'missing' information can be found with a little digging in the documentation and included files, plus a little playing around. All in all, documentation rates a good to very good mark.

Licensing

One thing that has helped the QL concept survive all these years is the way vendors license their extension software. PROGS is following this concept.

Simply put, if you are writing freeware or public domain (PD) software (you don't charge for it), you can use PROforma for free. PROforma may be delivered with your PD program, as well as the standard drivers. You may not deliver any drivers or fonts that are sold separately. You also may not deliver things such as the include files, files to be linked, source code files, etc. which are not needed to run your program.

If you are selling your program (commercial), there is a fee that you must pay PROGS per copy sold. This fee is very reasonable. Please contact PROGS for their current licensing charges and rules.

Again, this ability to distribute for a reasonable fee (or free with PD programs) will allow PROforma to become a standard for vector graphics and fonts with QL hosting systems.

Final Word

This has been a fairly long review. But after playing around with PROforma for a few weeks, I realised just how powerful it is. So I spent the extra time to make this both a review and a short walk through.

Bottom line - if you are interested in high quality graphics and font manipulation, PROforma delivers. Please be aware that you will have to have some experience in either using 'C' or assembly on the QL to use PROforma easily. But, your final results will be worth more than the effort required.

PFdata

Very interesting program for all DATAdesign owners. This program can create hardcopy of your DATAdesign files using PROforma. This means that you can use a large selection of fonts (as the ones included in LINEdesign), in any requested size. Also LINEdesign pictures can be included to add logo's, boxes etc. Several records can be printed on each page, several options for justification etc.

PFlist

Very easy to use program to create listings on any printer (especially inkjet and laser printers). Can include a footer with filename and filedate. Always allows perforation of your pages. The font and fontsize can be chosen (PFlist uses PROforma). PFlist can create your listing in two columns, and landscape (or both).

pfb2pff

This program gives you access to a large variety of fonts for PROforma, LINEdesign, PFdata, PFlist,... It allows you to convert Adobe Type 1 .pfb fonts to PROforma.

Atari SLM804 laser printer driver for PROforma

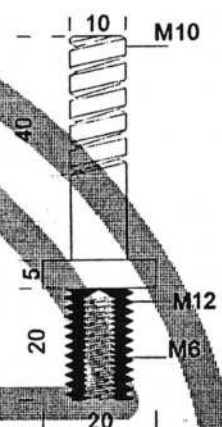
Epson ESC/P2 printer driver, running project, write for details

fax driver for PROforma, running project, write for details

AND OUR ALL TIME FAVORITES

LINEdesign

Our definitive favorite. LINEdesign is a very powerful vector drawing program. It is very userfriendly and can be used by everybody (as long as you have access to a QL or compatible computer). It includes many fonts and clipart drawings. LINEdesign can create pictures which can be reproduced on any printer and at any size, with the same result (resolution permitting). LINEdesign is very flexible. It can be used for artistic drawing, technical drawing, creating adverts (like this one), leaflets, fliers... LINEdesign can even do some desktop publishing. If you want high quality output, then LINEdesign is the program for you! LINEdesign allows you to create pages with text, lines, curves, rectangles (with rounded corners), pies, bitmaps... These can all be scaled, rotated, slanted, moved without degeneration. LINEdesign is delivered with an extensive manual including a printout of all fonts and clipart.



PROforma

The graphics library which we developed for LINEdesign. This library can be used by C programmers, and gives you access to all drawing commands and printer drivers which are used by LINEdesign, PFdata and PFlist, and even more !!

DATAdesign

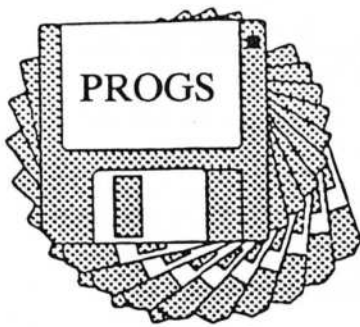
A very userfriendly database which is powerful and fast. The userfriendliness of this program is quite amazing. Can be used for all you database requirements.

DATAdesign API

Unleash the real power of DATAdesign. The API gives programmers direct access to the DATAdesign database management system. It offers you a record at a time data manipulation language which can be used from SuperBasic, C and Assembler. When you access the DATAdesign engine directly, DATAdesign suddenly turns into a fully relational database with an extra, as all records can always be referenced in a unique way. DATAdesign and the API allow you to use variable length fields. Fields can be added or deleted without problems. Files can be accessed by several jobs at the same time etc.

for more information, just write, phone or fax !!
Haachtstraat 92, 3020 Veltem, Belgium, tel/fax (016) 48 89 52

PFdata BEF 2000 (1760), PFlist BEF 2000 (1760), pfb2pff BEF 3000 (2700), SLM804 driver BEF 1000 (930), LINEdesign BEF 5000 (4350), PROforma BEF 5000 (4350), DATAdesign BEF 3000 (2700), DATAdesign API BEF 1000 (930). Prices in brackets for customers outside European Community. Payment terms : postage is included, send a EuroCheque in BEF, or your VISA / EuroCard / MasterCard number and expiry date. For upgrades, inquire !



PFlist (Letting your printer work for you)

Santa Clara, California, USA - James D. Hunkins

OVERVIEW

PFlist is, to put it simply, a file listing program. But before you get too unexcited, check out just what it can really do.

The program is of course able to produce program listings with the traditional footer including page number and your choice of text. In addition to this basic functionality, it adds the following capabilities:

- many different fonts and font sizes using printer graphics modes (ignore the font sets your printer came with, PFlist does).
- landscape (horizontal) or portrait (vertical) printing
- single or double column printing
- print spooling (outputting more than one file at a time unattended while you do something else either on the computer or elsewhere).

PFlist does all this simply and transparently by taking advantage of some of the latest QL software technologies including the PROGS PROforma (a font and vector manager 'Thing') and the pointer environment.

CONFIGURING FOR PFlist

PFlist uses the PROforma Thing, also from PROGS, to generate all its fonts and output to the printer. PROforma is loaded normally during boot up and can be used by different programs at the same time. Another well known program that currently uses it is LINEdesign, a vector graphics program by PROGS.

NOTE: even if you have PROforma already on your system, be sure to load the new version supplied, as it has extra functional-ity that PFlist uses. The new version is backwards compatible with other programs using it.

Before you try to run PFlist you will need to configure the printer drivers and fonts. This is done in two steps. The first is to configure the printer driver(s) of your choice to match your printer (this might not be needed, see below). The second is to configure PROforma which will set up all the fonts and printer drivers for PFlist to use.

The printer drivers that are included are, in many cases, set up correctly. This includes paper size and positioning, default printing devices, and grey shades. However, if any of the default settings do not work for you, you can configure any specific printer driver by executing the included CONFIG program (standard pointer environment) on the driver to be modified. You can save the driver under a new name if you would like to have different versions available. Also be sure to change the internal names for modified versions. The internal names are displayed when you want to choose a driver from within PFlist. If you happen to load two different drivers with the same internal names, you will see the names duplicated on your selection list and won't be able to determine which is which.

One case where you might need to modify a driver would be if you want to use a different paper size (letter versus A4 for example). Another case would be if you use a printer that emulates one of the printers included, you might have to change the page size and page origin. If you are lucky, the correct values will be in your printer manual. However, if this is not the case, you will need to make your best 'guess' and adjust accordingly. The information you need to calculate the page size values is included with the PFlist manual. Using this information to estimate the correct size values and then fine tuning worked well for me when I adjusted the LaserJetIII driver to run on a Brother Laser printer in LaserJetIII mode using letter size paper. It only took three tries to get it 'just right'.

PFlist - (CONT'D)

The DEVICE name setting should be obvious (EX: PAR for a parallel port, SER1 for serial port 1). However the grey shades need a short explanation. Different printers handle grey shading differently. The print drivers give you a choice of 2x2 (5 shades of grey), 4x4 (17 shades of grey), or 8x8 (65 shades of grey) grey shading. Normally, you use the higher numbers on higher resolution printers. But this option gives you a chance to experiment in case your printer is not delivering as you feel it should. Note that this will probably not effect the use of PFlist as much as it would a graphics program, such as LINEdesign.

Now that you have configured your print drivers (if you even had to), you need to quickly configure PROforma with the program PFconfig. This will tell the system where to find your fonts and printer drivers and which fonts and drivers you want available (the more you select the more you have to go through to find the one you want, plus the fact that each one available uses a small bit of memory). You also can set a default driver (not used by all programs), and control memory usage. This last item is the least likely to be used. However, with it you can sometimes speed up the system or save memory if you are pushing your memory to the limits already.

NOTE: when executing PFconfig, be sure to pass it the device / directory which contains the file PFFontMap. (EX: ex PFconfig;"dev1_pf_")

WARNING: PFconfig modifies PFFontMap. Avoid doing this by hand. I accidentally removed the screen driver (used by programs such as LINEdesign) and from then on I only got blank screens when drawing.

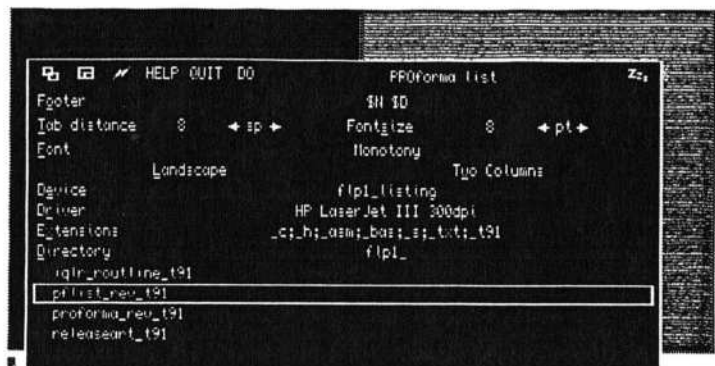
WARNING: The review copy has a minor annoyance (bug). Choosing the 'Delete a Font' or 'Delete a Driver' options during PFconfig if there are no fonts or drivers to delete causes a crash. But since you normally don't delete something that doesn't exist anyway, this is more an annoyance than a bug.

AND NOW -> PFlist

Now that you are finally done with all the configuration (it isn't nearly as bad as it sounds here - just supplying some extra tips), you are now just about ready to run PFlist.

If you have the pointer environment already running on your system, skip this and start the program. If not, see the included boot file for the sequence that you need to load/execute the pointer environment files (included).

If you have not added it to your boot file, you will have to load PROforma manually with the following command. As with PFconfig, you need to tell the software where to find the PFFontmap file.



EX: ex PROforma;"DEV1_pf_"

Now, go ahead and execute PFlist (ex PFlist).

The PFlist window will open and will look familiar if you are used to the pointer environment. If this is new to you, sit back and enjoy the convenience. A short pointer environment tutorial is included with documentation.

The following is a summary of the options given in the PFlist window.

PFlist - (CONT'D)

Standard Pointer Environment Options (top, left to right):

Move Icon	move the window to a different location
Size Icon	changes the height of the window, which affects the number of files shown in the file selection window
Refresh Icon	this updates the file list shown in the file selection window
Help	this gives a quick help reference. It is short and not context sensitive, but as the program is so simple to run, this would only be extra baggage.
Quit	quits the program (ESC also does this)
DO	if any files are selected to print, this will start the printing
Zzz	if the Pointer Button Frame is loaded, this will close the program window down to a small button

PFlist Options:

Footer	allows you to design your listing footer. It can include text, file name, date and time, and page number.
Tab Distance	you can set the distance (measured in spaces, points, inches, mm's or cm's)
Font Size	you can set the font size (in points, inches, mm's, or cm's)
Landscape	select this for Landscape (horizontal) mode, else it prints in portrait mode
2 Columns	select this for 2 column printing, else printing is done in a single column
Device	device to send printout to such as SER1, PAR, NET, or any file name (shows default device initially)
Driver	this will allow you to choose from a listing of all the Drivers you set up in PROforma, defaults to the default driver you configured into PROforma
Extensions	only files with extensions shown here will be displayed in the file selection window
Directory	the file selection window uses this directory
File Selection Window	this displays the files as defined by the two previous options. By HITting a file (space bar or left mouse button), it will be highlighted. This way you can choose several files to print in a single session. By DOing a file (ENTER or right mouse button), that file and any other file highlighted will be printed.

Another configuration note - with the CONFIG program, you can configure several of the options given here in your PFlist executable file. Just select PFlist from the menu in CONFIG and follow the prompts. I recommend that you do this after you play with PFlist so that you will understand the settings better. Note that the HELP option may not locate the Help file until you config PFlist. If this happens, a warning box will say 'NOT FOUND'.

What You Need/What You Get

PFlist should run on any QL and QL compatible system today. Your system will need to execute programs and pass them parameters, such is seen in the following example:

PFlist - (CONT'D)

EX: ex DEV1_PROforma;"DEV1_"

This capability/command is found in TKII and many other toolkits.

Performance wise, even the original QL should be able to handle the more complex font printing, as PROforma and PFlist are multi-tasking and can run in the background. This will allow you to do other things while PROforma and PFlist are busy printing.

What you get is everything you need. In case you don't all ready have them, the basic pointer environment files are included. So are the menu extensions from Jochen Merz which are used by PFconfig. PROforma and its configuration program is also included. As always, even if you have any of these files, make sure that you are using the latest versions. For example, PFlist depends on new functionality which was added to the included version of PROforma. It will not run with an older version.

PFlist comes with eight different fonts. The manual says that these fonts can be scaled very well which will make for much more legible results, no matter what font size you choose. You can also use any PROforma fonts which you might have received with LINEdesign or elsewhere. I have over 50 fonts on my system alone. Public Domain (PD) Adobe Type 1 fonts will also be convertible for use with another program from PROGS (Pfb2pff).

The following is a list of printer drivers included in the review package. Since the drivers are now external, more can be added at any time. If your printer can not run with one of the drivers shown here, check with your distributor for an up-to-date list.

HP LaserJet	Epson 9 pin
HP LaserJet II	Epson 24 pin
HP LaserJet III	NEC P5
HP DeskJet	Canon BJ10
HP DeskJet 500	SLM804

Documentation

The document is split into several parts. Interesting to note that the shortest section seems to be on PFlist itself. Luckily, PFlist is indeed a simple program to run, once you get it set up.

The PFlist section is just seven pages long, covering an introduction, legalize, and the different functions. Then comes a series of pages showing the eight included fonts. I personally found this a nice touch as I would have printed them out anyway for future reference.

As PFlist uses and is indeed dependant on the PROforma 'thing', the next section gives six pages of information on PROforma. It explains what PROforma is, how to install it, and how to configure it with PFconfig. An example is given for installing it on a hard drive that will be also useful for floppy drive users.

The last section is for newcomers to the pointer environment and menu extensions. It runs for thirteen pages and gives a precise run through of these subjects.

Problems

I only found a few minor problems, which will not affect most users. The biggest one is for Minerva users. It seems that Minerva does something different with the stack, which limits the stack use by PROforma. A special Minerva version of two files is included to avoid the resulting problems. The only draw back in this 'fix' is that the screen driver is not fully multi-tasking under the pointer environment. As PFlist does not use PROforma for the screen but only for the printer, this fix should be transparent to PFlist users.

PFlist - (CONT'D)

However, if you are running LINEdesign, this PROforma update will cause LINEdesign to draw, even if there is another window in front of it. To get around this simply, when doing anything in LINEdesign to cause it to draw, stay in the program until it is done.

In PFconfig the underlined characters that pick the function don't always match. If you get the wrong function due to this, simply ESC out of it. Then move the cursor over the desired function and try again.

For those of you without printers that match or that can't emulate those shown in the drivers list, you may or may not be able to get one to work. I personally own a Canon BJ-200 printer at home and have had difficulty getting page sizing to work using either the BJ10 or Epson 24 pin emulator modes. This seems to be a Canon problem, and not a driver problem. (this review was done using a Brother emulating a LaserJetIII from work). If I find a modification to one of the drivers to work with my Canon, I will print it (yes, it is worth the effort to get this program to work on my home printer - I really do like it.)

Final Thoughts

Just a few more notes that did not fit elsewhere, and then I will summarize my impressions.

First, when running in landscape and/or 2 column mode, the print out slowed down due to the extra processing required. Also, printing in graphics mode is never as fast as printing with built in printer fonts. However, the extra readability and information (I like to use smaller fonts) more than make up for the speed difference, which wasn't that bad anyway. Also, remember that you can start several files printing and then work on something else while they print.

I also like the ability to be able to send a print out to a file. For the review I printed my files to a floppy disk and took it to work to print on the printer there.

I only found one thing that might improve the program's interface. Currently whenever a file(s) is chosen to be printed, it is highlighted in green. When it is done printing, it stays highlighted. It would be nice if the highlight could be changed to an outline when a file is completed. This would give me a quick progress report, especially when printing several files.

Summary

It is nice to see PROGS finding different uses of their PROforma thing software. The package is powerful and can make easy work of font handling. PFlist is a perfect application for this. Despite a bit of set up time (always needed as software gets more powerful), PFlist is very easy to use and produces high quality listings unlike what most people ever thought their printer could do.

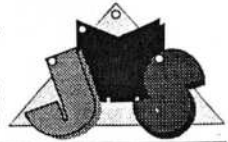
The final rating:

PFlist with PROforma	a very good package for listing files, with excellent quality results and useful options
Setup	a little effort but not too bad, a one time deal
Documentation	well organized, simple, and more than enough
Support	PROGS is continuing to improve its software. Future improvements in PROforma will directly improve PFlist and other programs using it.

JOHN MERZ SOFTWARE

Im stillen Winkel 12 • 47169 Duisburg • Germany

☎ and Fax: 0203-501274 • Mailbox: 0203-591706



typeset93-ESC/P2 - Dedicated text87 printer drivers for all EPSON printers with ESC/P2 including the new Stylus 800 and the upcoming Stylus 300. Supports the scalable fonts, special characters and block graphics for drawing borders etc. **DM 69,90**

QMAKE - Version 2

Pointer-driven Make program for the GST/Quanta Assembler package. Very comfortable, with many options (including library-building). **DM 44,90**
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QMenu - the Menu Extension. QMenu is an interface with pre-defined menus (e.g. multi-column file-select, simple-choice boxes, select from lists). The menus can be used from SuperBASIC, machine code and other languages. New character-select menu. [V5.07] **DM 39,90**

Update with new manual **DM 16,-**

QD Version 6!

Brandnew version with brandnew features! **Selective automatic tab compression/expansion!** You can, for example, make QD compress all spaces which fit to tabs into a tab on given file extensions, say `_ASM`, and get them automatically expanded when the file is loaded again! This saves, even on well-documented source files, between 30 and 40% disk space!!! It also speeds up assembly, as the file gets shorter! Another VERY useful feature is the **permanent line/column display** which does not slow QD down! Editor handling and line handling speeded up. **Bracket match** - position cursor over a bracket `() [] {} ""` etc. and press a key-combination, and QD finds the matching bracket or parenthesis! Some minor improvements, keyclick within QD added etc. [V6.16]

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Now six different games in one! Another three, even more complex patiences have been added to the existing three: Spine, Crapoud & Four-in-a-Hand (two of them work with two packs of cards). More options (different patterns for backside of the cards), high-scores, moveable window etc. **DM 59,-**
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QSpread - Spreadsheet program for the Pointer Environment. Mouse- and/or keyboard-controllable! Maximum 32768 cells. Macro functions. Easy, quick and comfortable block handling and entry. Many additional functions, which belong to today's standard-equipment: Help, Button, use of the Scrap. The current version adds missing features and more, e.g. cell-reference-adjustment, echo, IF and comparisons, toolbar, time & date functions. You can now print the formulae. [V1.26]

with comprehensive manual **DM 169,-**

Update with new manual (useful if old version is <1.20) **DM 16,-**

QSpread Demo Version - send 3 Internation Reply Coupons if ordered alone, otherwise enclose a spare disc with an order or update and it is free!

QMON / JMON - Brandnew version of the well-known Monitor, Debugger, Disassembler. Also for the Pointer Environment. QMON now recognises the various stack frames and cache handling of the different processors (6800x to 68040). A Trap level can be set, and a permanent Breakpoint has been introduced. JMON is a job-monitor with all the features of QMON, but it has got its own, moveable windows, which may be put to sleep etc. - really embedded in the Extended Environment.

New Version (Now English possible!) **DM 94,90**

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Interface and parser for QD & QLiberator. Write your BASIC program in QD, press F10 and then the compiler QLiberator can be started and, if the compile run is successful, the resulting program will be started automatically too. WHEN works and the first character problem is fixed [V2.04]

Owners of QD (must be V5 or 6) and QLiberator only require the QBASIC extension:

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This new operating system is not only faster, but offers far more facilities. It can be used on a GoldCard, SuperGoldCard, any ATARI ST, STE, TT with or without QL emulators and on the QXL. You also get SBASIC, a SuperBASIC-compatible BASIC, which runs at about the same speed as compiled (QLiberated) BASIC. You can execute as many SBASIC's as you want at the same time, having multiple interpreters! Of course, there are useful improvements in the structures, more commands & extensions. The third big bonus is the flexible disk format, integrated into Level 3 Device drivers. These drivers will handle QDOS, TOS and DOS disks as if they all were QDOS disks. You do not need any file conversion utilities etc. anymore, you just put a disk of the required format into the disk drive and say LOAD, DIR flip1_ etc. as if it was a QDOS disk. The ATARI version has an even extended facility for the harddisk-driver. You can assign any TOS/DOS harddisk partition to a QDOS WIN-Drive, i.e. define WIN3_ to be TOS partition C: etc.

Too many news to list here, please write for full information und future updates...

If you require more information about any product, then please write for a free catalogue!

TERMS OF PAYMENT

Postage and package (Europe) **DM 14,-** (if total value of goods is up to **DM 50,-**, then only **DM 9,-**). (Overseas) between **DM 14,-** (1 item) and **DM 35,-** (maximum). All prices incl. 15% V.A.T. (can be deducted for orders from non-EEC-countries). E&OE. Cheques in DM, £'s, Eurocheques and Credit Cards accepted.

UPDATES

Updates of our software are usually free. The exception: major changes on a program (a new Version number before the '.'). Always send the master disk(s) to us, together with 4 international reply coupons for up to 5 discs or 8 IRC's for more. If you send updates together with a software order, then the return postage is covered by the wholesale postage. If a disk is faulty, add 1 IRC for a replacement. As the software changes from time to time, you may order a new manual together with the disc update. With upgrades, you automatically get a new manual.





A SERMouse Adapter

Oak Ridge, Tennessee, USA - Mel LaVerne

Sometime ago, having been encouraged by John Impellizzeri's review of SERMouse, I took the plunge and bought a serial mouse from MEI/Micro for the munificent sum of \$7.87 (even better than John's \$10 minimum!).

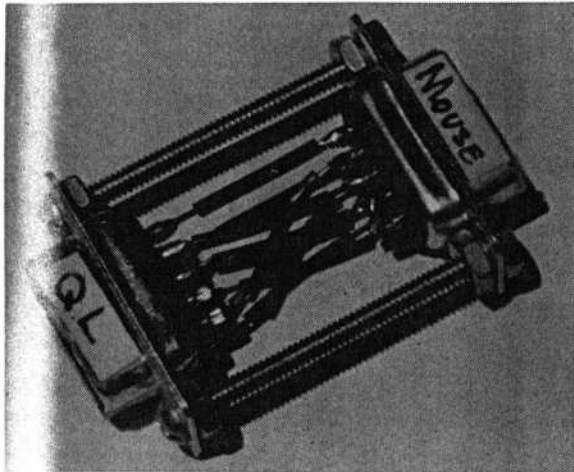
It was immediately obvious that I would need a gender changer in order to hook up to SER2. Being naturally thrifty, I sought an economical way to use my economical mouse and came up with the device shown in the picture accompanying this article.

Bill of Materials

Item	Required
DB9, Male	2
4-40 Screws, Roundhead, 1 1/2"	2
4-40 Nuts	6
Miscellaneous bare wire scraps	5
Plastic sleeves, assorted colors	5

Assembly:

Mount the two screws to one of the DB9s, snugging up the nuts. As an aid in remembering which end is which (they're NOT interchangeable), I took the head of the screw as designating the QL end of the assembly. Although it's not essential, I used the further precaution of labeling the two ends.



(photograph enlarged)

Next, place a second nut on each screw, running the nuts on a short way. Now place the other DB9 on the screws and run the remaining nuts on just to full thread. Check to see that the DB9s are installed with the same side up and the solder terminals facing each other. Finally, snug the inner nuts up against the second DB9.

I found the wiring to be simplified if the bare wires were cut slightly oversize and soldered in place at one end. The wires could then be shaped where necessary and clipped to just the right length for soldering the other ends in place. Because the sleeves melt readily, it is essential to cut them a little short to allow

clipping a small heatsink to the wire, between the sleeve and the terminal, when doing the final soldering.

Pinout Table

QL	Mouse
1	5
2	3
3	2
9	4
9	7

A piece of large diameter shrink tubing could be slipped over the assembly to protect the wires, if desired. I haven't found it necessary.

Brussels and London Shows

Albuquerque, New Mexico, USA - Claude Schleyer

This report comes from an American who had the fortunate coincidence to take a European vacation and be able to pass by the QL Workshop held at the Eurovolley Center in Brussels on June 18. What an exciting time it was for this foreigner to meet with such a wide range of QL enthusiasts who greeted me with, "You came all that way for this"? Actually, we went to see the beautiful country of Belgium and was fortunate to be able to visit the workshop as a big bonus.



The session was not quite as large as might be expected for a 10th anniversary celebration, but it was obvious that those in attendance were having a great time. The vendors were helpful as usual and eager to demonstrate their latest wares. Bill Richardson was there with his usual variety of QL supplies and was seen passing out IQLR leaflets at his booth. His latest acquisition is a quantity of Cambridge Z88 notebook computers available at a very good price. The Z88 is the last computer developed by Sinclair, but it does not bear his name because of the buy-out deal by Amstrad. It is a marvellous little computer (I have two of them) but, as usual, it was not readily accepted by the mainstream computer market.



(Jochen Merz demonstrating QSpread)

Jochen Merz from Germany was there demonstrating some impressive software, of which QSPREAD caught my attention; and Joachim Van der Auwera of Belgium was demonstrating his impressive LINEDESIGN and DATADESIGN programs. Tony Firshman was demonstrating a Christmas lighting display operated by his I2C INTERFACES, and was showing his newest product under development: a TELE-TEXT decoder for the QL. Then, to top it off, Miracle Systems was demonstrating their very impressive SUPER GOLD CARD and THE QXL. A nice surprise was a disk of utility programs given to each attendee to commemorate the Brussels 94 event.



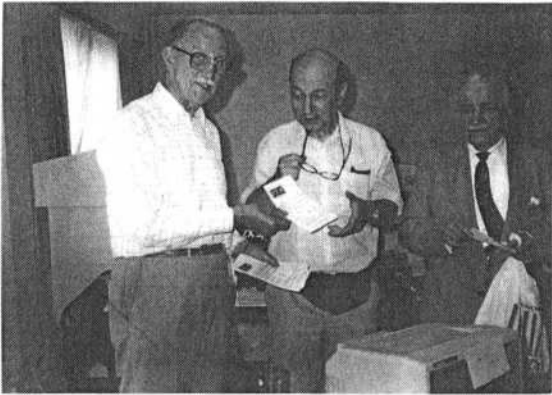
(Joachim Van der Auwera demonstrating LINEdesign)

After riding those marvellous trains around Belgium, we finished our vacation in England and I managed to slip by the London QL Workshop on June 25 before returning home the next day.

This excellent workshop was well-attended and a good number of exhibitors were present, including QUANTA.

I give credit to IQLR for my fabulous vacation, for it was the May-June issue where I discovered the dates and locations of these workshops and was able to plan accordingly. Thanks, IQLR!

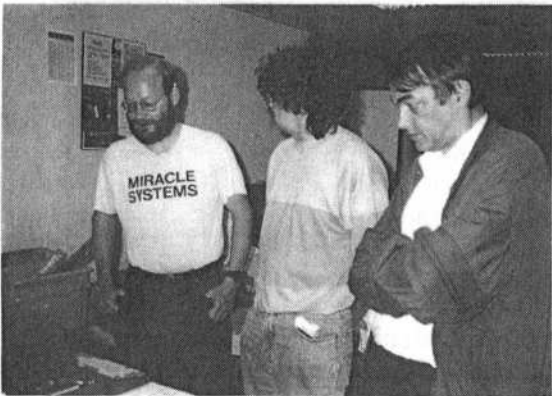
Brussels and London Shows - (CONT'D)



Bill Richardson caught in the act of distributing IQLR subscription forms in Brussels. Bill had his usual line of products along with a great deal on Z88 Cambridge computers.



Ben and Tony (background) Firstman of TF Services demonstrated their NEW Tele-Text decoder for the QL. It's rumoured that Ben is the brains behind T F Services. (Brussels)



Stuart Honeyball doing what he loves to do, explaining his latest hardware gems. (Brussels)



Lawrence Reeves of Minerva fame, seen here demonstrating Minerva's I2C interface. (Brussels)



Ron Dunnett of Quebbesoft doing a brisk bit of business at the London Trader's Fair. In the foreground you can make out Ron's Mini Tower. Ron is offering the service of putting these together for interested users.



Quanta was well represented at the recent London Trader's Fair by their able Chairman Roy Brereton (on the left) and John Taylor (on the right) their long standing Treasurer (the first time I've seen a treasurer smile).

QXL IN COMMAND

Bedford, Massachusetts & Pylesville, Maryland, USA
Al Boehm Tom Robbins



In the last issue of IQLR, I (Tom) gave some preliminary observations on the Miracle Systems QXL. Al Boehm sent several E-mail messages dealing with the QXL and finally suggested that what is needed is a continuing series of IQLR articles dealing with the QXL. Having had a little more time to evaluate the QXL, and having received an update to the software, we agreed to give it a try. This series will be a collaboration between us.

PRIOR LIMITATIONS - I remarked in the previous article that I had experienced occasional spurious characters being entered by a QXL gremlin. This is another example of the 'read the manual, you fool'. The instructions state that if your PC has a Turbo mode, this should not be used. I run the QXL on an XT that has a Turbo mode. When following the instructions and running in the non Turbo mode, the spurious keypress problem is eliminated. Al tried his QXL (controlling a 40MHz 80386 clone with a Stealth 24 video board) extensively with Turbo on but without any problems.

I believe the mouse problem that I reported of the mouse locking up is due to bus conflicts because of the low speed of the old XT that I use. It is not really a problem, as setting mouse acceleration to a lower speed results in the mouse working correctly.

Another drawback I came across was that while Qliberator worked, it would not compile Superbasic statements that dimensioned arrays. Programs compiled on a QL with arrays ran fine on the QXL, but could not be compiled on the QXL. However, when the July 1994 SMSQ version 2.16 came this was no longer a problem. Qliberator now handles arrays just fine.

NEW UPGRADE - That's right, near the end of July, we received an update to the QXL software (Version 2.16, PRINT VER\$ gives HBA). At last we have a SuperBasic for the QXL! Actually this upgrade contains SBASIC, which does a lot more than SuperBasic. It really ought to be called HyperBasic - it has the ability to run multitasking SuperBasic just like executable programs!

Tom's QXL also appears now to run fine in the Turbo mode. Screen handling also seems "snappier" - a subjective judgement. Al put the SBASIC through a host of SuperBasic programs which it handled with ease and very fast. The graphics commands work fine in the EGA, VGA, and SVGA (800 by 600 pixels!) modes. Commands like LINE, POINT, BLOCK and CIRCLE did just fine. (CIRCLE wasn't a perfect circle, but I attribute that to the monitor controls.) Plus the built in screen dumps also produced some very nice QL, EGA, VGA, and SVGA screen printer copies.

When the utilities PTR_GEN and WMAN (Pointer and window manager) that came with Page Designer 3 were used with the higher resolution screens, they worked just fine. That is, all of the screens associated with each job were saved and automatically flashed onto the monitor when that job was made active with CTRL C.

Al was able to configure ARCED (an editor) for each of the higher resolution screens so that the whole screen is used.

The FORMAT command now works given that the floppies have formatted previously for DOS. The QXL is able to read from DOS files on floppies directly without using DISCOVER or some other special program.

LIMITATIONS - Many programs like Xchange run in all modes but using only 512 by 256 pixels. Other programs that POKE directly to the screen like Page Designer 3, Text87plus4, and Image Processor run properly only in the QL Mode. Image Processor had a minor glitch (Error message: Line 19365 SCROLL invalid parameter) in accessing the HELP files that was overcome with a continue in the error box generated by (I think) PTR_GEN.

QXL IN CHARGE - (CONT'D)

The fundamental problem is you can't store a higher resolution screen in the 32K bytes set aside for QL screens. Each line across the screen takes more bytes. When you are in a higher resolution mode and use the standard QL location to POKE the first pixel of the second line, you wind up POKING the 513th pixel of the first line. Many of the special DIY graphic commands such as PLOT and DRAW have this problem but with a little figuring you can recalculate where they should be. However, it is much easier using the standard commands such as BLOCK to paint a given pixel.

The only KEYWORDS that appear not to work are CURSOR with four arguments (CURSOR with two arguments works just fine for all screen sizes), and FILL still bleeds out of some enclosed forms just as it did in early QL roms. (Could it be Miricle is duplicating this bug on purpose to keep it compatible with the QL?)

DOCUMENTATION - So far QXL documentation is on DOC or LIS files on the same floppy as the operating system. These have been very useful to get up and running but leave a lot to be said. I found out about the screen dumps from the new Gold Card manual. This is a very good manual. Since the QXL is intended to be compatible with the GOLD card, nearly everything in it also applies to the QXL. (Well almost everything - things like automatic booting without pressing F1 or F2 are not relevant to the QXL.) Miracle does apologize in the DOC file and promised a proper manual in the future.

HOPES and WISHES - In my review, I (Tom) had written that there were three things I would like to see in the QXL. These were a Superbasic interpreter, the ability to run all TURBO compiled programs, and direct access to MSDOS files on the hard disk. - Well, this release of the QXL/SMSQ software gives me two out of three. The three TURBO programs that did not run on the 2.10 version of the QXL software now run and there is the fine SBASIC.

Al would like to see an easier way to switch to higher resolution screens. Now you must go back to DOS and copy the operating system for the desired screen. Wouldn't it be nice to simply say in SBASIC - MODE "SVGA" and have that screen active?

SPEED - Since most (all?) TURBO'd programs can run, Tom was able to run a benchmark program by Urs Koenig called TINDEXT. The results are as follows:

Setup	ROM	INT	REAL	TRIG	TEXT	GRAF	STORE	TOTAL	FACTOR
QL/128K	MGG	5.3	12.5	20.0	95.0	15.0	6.5	154.3	1.000
QL/GOLDCARD	MGG	0.8	1.9	4.3	38.0	6.0	1.1	52.1	2.962
MEGA ST-1 16mhz	JS	0.8	2.2	4.4	21.0	3.0	1.2	32.6	4.733
MEGA ST-4 68030	JS	0.3	0.9	1.8	10.0	2.0	0.2	15.2	10.151
QXL 2.16/XT	HBA	0.2	0.5	1.0	3.0	1.0	0.2	5.9	26.153

Results on QXL/GOLDCARD and QXL are from Tom's runs, others are benchmarks published by Urs Koenig.

The "keypatch" program to match the US-English keyboard to the UK-English keymap of SMSQ no longer needs to be run. Tom was able to patch that section of the SMSQ file that contains the keyboard map. Any QXL user with a US keyboard who would like a copy can contact Tom directly or through IQLR.

We hope to keep QXL In Command as a continuing feature in IQLR. Please send any questions, comments, or ideas to TOM or AL directly or in care of IQLR.

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62

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GT PROLOG - QL (PART 2)

Oak Ridge, Tennessee, USA - Mel LaVerne



In Part 1 of this review of GT-Prolog (GTP), I presented a short tutorial on Prolog for the benefit of those who, like me, were rank beginners in the language. Not a lot was given with respect to GTP operation. In this final part I propose to backtrack a bit and give somewhat more of the mechanics of running GTP.

Starting GTP with the Boot file specified in part 1, the PRL file is loaded and an initial copyright, etc screen is presented. Acknowledging the screen with an Enter brings up a screen showing the default memory sizes and I/O stream allocations. A simple "Enter" accepts each default value; entering a new value changes it.

GTP is initially configured for a QL with 512 Kb added RAM, 640 Kb total. If extra memory is attached, boosting the data, heap, and code allotments is recommended in order to reduce the frequency of "garbage collection".

I have found, by experiment, that a factor of as much as 5 can be used with a Gold Card before the dreaded "Insufficient memory available" message appears. With a Super Gold Card, an acceptable factor is 11.

Reducing the memory sizes is inadvisable; aside from its effect on garbage collection, there is the likelihood of program termination with the note "bootfile error: -3". Similar tampering with the I/O allocations can lead to spectacular crashes.

The final Enter causes the "bootstrap file", Workbench BIPs (oddly enough, referred to on screen as the "boot" file), to be loaded and the startup windows to be displayed. For the curious, the extension BIPs refers to Built In Procedures.

The display is comprised of six windows, only four of which are visible initially. The major portion of the screen is occupied by the user window. As the manual puts it, this is the main interactive shell window.

To the right of the user area is the display window, used primarily for menus.

Beneath the user window is the message window, used for error or debugging notes and other dialogs.

The remaining area, at the lower right, is occupied by the break window, used for interrupting program execution.

The fifth area is the edit window, not initially visible. When called, this window overlays both the user and display windows and constitutes the main editor display area. The user and display windows are, of course, reclaimed when the editor is no longer active.

Finally, within the break window, we have the gc, or "garbage collector", window. A letter is displayed in this window whenever a garbage collector is activated, e.g., H for heap, S for stack. A garbage collector is automatically activated whenever a corresponding resource is used up. Frequent display of a letter may show inadequate initial assignment of memory size to that resource.

On the off chance that someone out there is not familiar with the term, let me give my definition of "garbage collector". On occasion, a section of memory may fill up with items no longer needed. Suppose we have a routine that detects this condition and reclaims the space. The items removed are the garbage; the routine is the garbage collector.

GT-PROLOG/QL - (CONT'D)

At startup, the display window is occupied by the top level Workbench menu. This is the menu to which we attempt to return when something goes awry and we would like to start afresh.

Since GTP is completely menu-driven, it might be helpful, at this point, to digress and show and comment on content of all the menus:

WORKBENCH	DATABASE	BREAK	ERROR	DEBUG
Query	Consult	Query	Fail	Step
Edit	Reconsult	Edit	Succeed	Hop
Database	compile	Database	Throw	Leap
Restart	Load	Restart	Break	Trace
eXit	reload	eXit	Restart	Notrace
				Else
				Call
				Fail
				Break
				Restart

All of the top level (WORKBENCH) entry points have been discussed previously, except for Database, which calls up (surprise !) the Database menu.

DATABASE:

"Consult" reads clauses from a specified file, compiles them, and adds them to those already in the database. My interpretation of the process is that if the same file is "consulted" more than once, then duplicate copies of the clauses will appear in the database.

Ordinarily, the above duplicating is undesirable, so we also have "Reconsult". With it, only those clauses not already in the database are added in; those already present are not duplicated. This would be the option to use in the case of adding one or several clauses to an existing Prolog file; only the new clauses should be compiled and added.

Note that with either of the above options, the compiled version is transient. When the machine is shut off, the compiled version disappears.

"compile" makes for a more permanent arrangement. Here, we require specifying two file names, one for a source file and one for an object file. Clauses read from the source file are compiled into object format and written to the object file. The object file is not added to the database at this time, but may be added later with "Load" or "reload".

Except for dealing with compiled (object) files, Load and reload are analogous in their actions to Consult and Reconsult, respectively.

BREAK:

Arrival here is the result of halting program execution by typing Esc in the Break window. Note that the options are the same as those for the Workbench menu; only the title differs.

With the possible exception of Edit, actions taken are the same as in the Workbench menu. As noted in Part 1, one should not return to the Editor from the Break menu; recursive use of the Editor is a no-no.

Depending on actions taken by GTP during the break, resumption of program execution may be possible if Esc is typed while in this menu.

ERROR:

GT-PROLOG/QL - (CONT'D)

This menu is selected as the result of an error being encountered while in a Built-In Procedure (BIP). An explanatory error message is displayed in the message window.

If Fail is selected, GTP resumes execution as if the BIP had failed.

Selecting Succeed causes execution to proceed as if the BIP had, in fact, succeeded. Recall that in Part 1 I described how use of this option allowed me to run queens(n) for various values of n. I was forcing GTP to accept my query as valid.

Break, of course, returns one to the Break menu, allowing selection of most, if not all, of the top level options.

Restart drops everything and returns to the top level Workbench menu.

DEBUG:

An adequate explanation of some of the options in this menu would involve explaining the control flow model known as the "Byrd Four Port Box Model". Reference 3, in Part 1, has such an explanation. Together with a fairly simple example, Reference 3 takes seven and one-half pages to present it. Since I have neither the time, space, nor inclination for such an effort, some of the following will be simplistic and therefore imprecise. "Spypoint" I take as Prolog jargon equivalent to the more common "breakpoint".

Step is analogous to single stepping through, say, a Basic program. Slow, detailed, almost overwhelmingly so.

Hop and Leap should, to my way of thinking, indicate progressively larger jumps through a program. However, the definitions seem to contradict this conclusion. Hop is defined to stop on meeting a certain condition, call it A, ignoring spypoints met along the way. Leap, however, is defined to stop on meeting condition A or encountering a spypoint, which seems more restrictive. Perhaps the definitions are reversed??

Trace is defined like Leap with the added feature of having tracing enabled.

Notrace is easy: it turns Trace off.

Else causes local failure and backtracks to the most recent choice point (undefined, but which I take to be the nearest branching of the tree that we are descending).

Call restores the current goal to that execution state in which in which it has been invoked but candidate clauses have not yet been selected (the CALL port of the box model!).

Fail causes the current goal to fail (completely, according to the User Guide).

The remaining options, Break and Restart, are as before.

Digression completed, we return to running GTP.

Suppose we wish to enter and run a new program. The Workbench menu is present, so select Edit. You will be asked for a file name. Type in a name. Now type in the program, remembering to terminate each clause with a full stop ".". You may now use the "quick key", ALT+C, to consult (i.e., compile) your program.

Having (successfully, of course) entered and compiled your program, you will now want to run it. Type Esc while still in the Editor. This presents the Break menu, from which you select the Query option. If your response has correct syntax (don't forget that full stop!), the program will now run.

GT-PROLOG/QL - (CONT'D)

If you wish to run an existing program, the simplest way seems to be to use the Query from the Workbench menu. In response to the prompt (?-), enter " edit(drive_file)". Then proceed as above.

"The time has come," the Walrus said, "to talk of many things." And one of those things whose talking time has come is an overall assessment of GTP.

Technically, GTP seems excellent, a real tour de force. Where I feel it is lacking is in providing sufficient detail to accomplish more than elementary operations. I can write, compile, and run a Prolog program (sometimes !) but little beyond that.

For example, I would like sometimes to send output to a printer. Presumably, I would use "Write" (or is it "Writeq" ?), specify an output "Stream" in some as yet unknown form, and open that stream somehow to my printer. Nothing unusual there; I can determine what to do to achieve my ends. If only I could find out precisely how ! Examples, examples, please.

Then, there are the questions that simply seem to be ignored. For instance, how does one exit a Query ? After much fumbling, I have found that giving an empty statement works, i.e., type just the full stop and Enter. GTP responds with an error, "invalid token". From the ensuing Error menu, Restart takes me back to Workbench, ready to start over. Surely, there must be a less clumsy way !

Perhaps the User Guide needs to expand from its present 40 pages to about 80 pages ? Oh well, as the private said to the sergeant, "Details, details".

A SUPPLIER RESPONDS

Duisburg, Germany - Jochen Merz Software

I would like to add to Doug LaVerne's test of Black Knight which appeared in volume 4 issue 2 of IQLR. The version tested was an early one and contained some oddities, these are now fixed. The same is true for C68 problems, which were mainly related to bad (or no) cache handling. This is fixed too. Users with versions before 1.3 are welcome to send their master disk in for a free update. Doug should have version 1.3 by the time this is read, so maybe he can have another go at it. (*Editor's Note: Doug now has the upgrade, look for his review on our next issue.*)

Minerva II Tidbit

Oak Ridge, Tennessee, USA - Mel LaVerne

Here is a small utility for snooping about in the Minerva II ram. There's nothing sacred about the limits on i: i = 0 TO 255 will give you EVERYTHING. The given values exclude the control and clock area (0-15) and unassigned, reserved areas (33-34, 164-251, 255). The PAUSE is there just to keep the screen under control.

```
Credits: Functions hpeek$ and rs$ were lifted (with slight modifications) from MiniConfig_Bas.
100 TK2 EXT: LRESPR flp1 i2c io bin; x$ = hpeek$(0,256): CLS
110 FOR i = 16 TO 32, 35 TO 163, 252 TO 254: n = CODE(x$(i+1)): PRINT i,n: PAUSE
120 DEFine FuNction hpeek$(a,n)
130   RETurn I2C_IO(CHR$(164)&CHR$(a)&rl$(n1)&CHR$(188)&CHR$(255),n,80,1)
140 END DEFine hpeek$(a,n)
150 DEFine FuNction rl$(x)
160   LOCAl l$,c,lp: l$ = "": c = x
170   REPEAT lp: IF c THEN l$ = CHR$(c&&127)&l$: c = c DIV 128: else RETurn l$
180 END DEFine rl$
66
```

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Kybd memb £9.50(9)(10.50)	Circuit diags . £3.50(£3)[£4]
68008 cpu ... £8.50(£8)[£11]	1377 PAL £3.50(£3)[£4]
JM ROM...£10.50(£10)(£11)	Power supply £17(£16)[£26]
8302 ULA...£10.50(10)[£11]	surface [£21]
8049 IPC ..£8.50(£7.50)[£9]	8301 ULA £10.50(£10)[£11]

Other components/(sockets etc) please phone

I²C Interfaces

The I²C bus was designed by Philips to simplify interfacing. Minerva MKII clock is driven by an I²C chip, & a connector allows connection of other circuits. Our external circuits will interconnect without leads. Up to 5 interfaces can be powered off the QL - up to 4 of each can be separately addressed from the QL. No soldering required to fit to the QL. High quality cases and labels, with professionally made double sided circuit boards. Interface sends & receives at 100k bps

Parallel Interface gives 16 input/output lines. Can be used for logic level output eg model train controllers. Input direct to motor drivers (eg L293/ L298).....£26(£24)[£27]

Analogue Interface Each gives 8 analogue to digital inputs, and 2 digital/analogue outputs. For temp measurement, sound sampling etc.....£31.50(£29)[£30]

Data sheets. (analogue/parallel chips)....£2.50(£2)[£3]

Control software/manual£2.50 (£2) [£3]

(First interface purchase includes free 15D/9D lead)

QBBS

UKs first QL scrolling Bulletin Board

Megabytes of files. Messages to/from UK/Belgium/ Holland/USA/Germany for a UK phone call.

TANDATA callers add SIX zeros (000000) or wait for 3 seconds of modem tone if dialling manually.

(+44)344-890987 (up to V32bis)

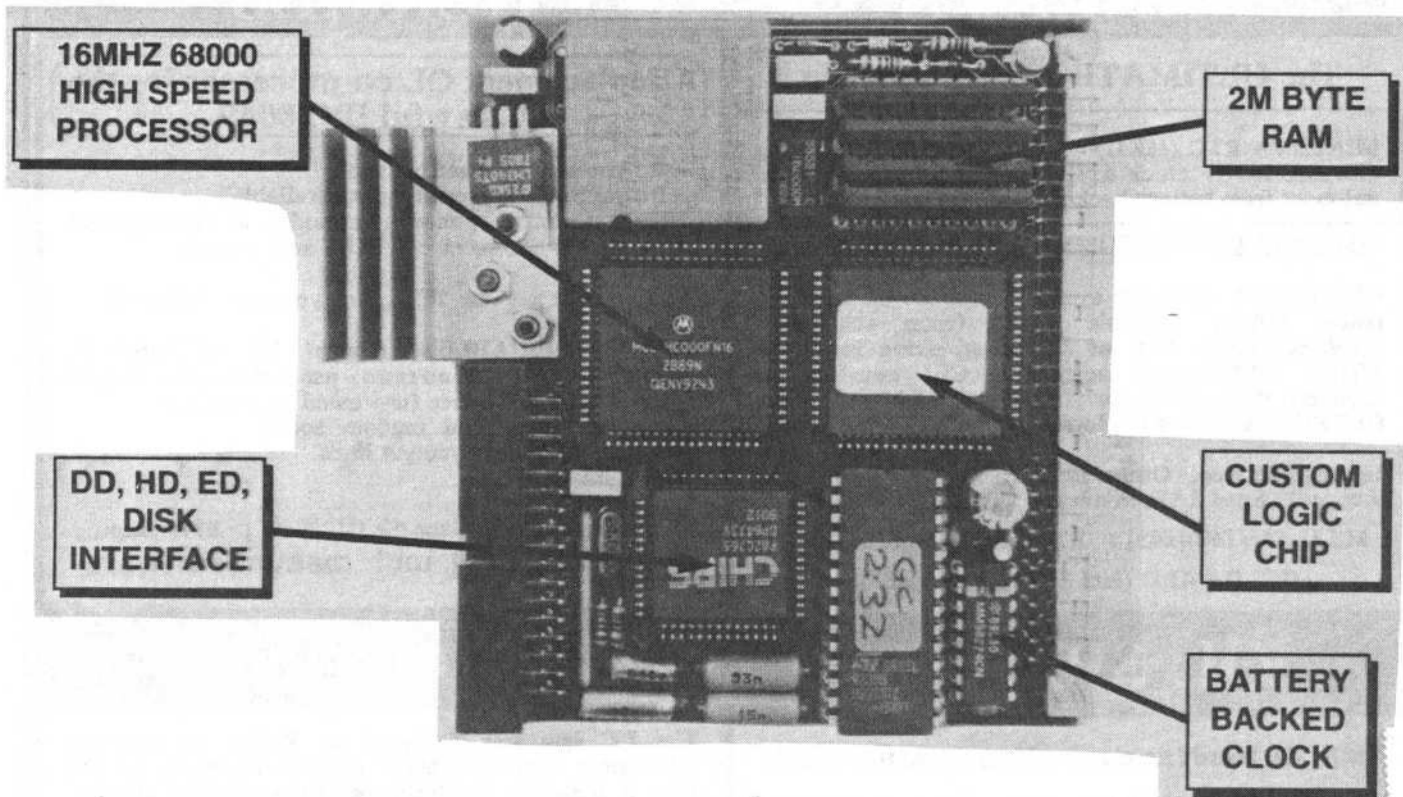
Prices include AIRMAIL post & packing & zero VAT rated outside the EC. Prices are: EC except UK (Europe) [outside Europe]. Ring for UK prices or see QL World/Quanta/QReview. Payment can be by Mastercard/ Visa/Access/Eurocard/£ cheque/UK postal order/money order/bank draft drawn on branch in the UK or CASH!. (NOT Eurocheques due to crazy bank charges - £15!!) MAIL ORDER ONLY - no callers without ringing first. Any customs duty etc customers responsibility. Send IRC for full list and details.

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Tel:(+44)344-890986

Fax & BBS: (+44)344-890987

MIRACLE SYSTEMS



QL GOLD CARD

Recycled Gold Card £150 inc. (£125 outside EC)

This is the expansion that has been revolutionising the QL. It is very easy to fit, it simply plugs into the expansion port at the left hand of the QL, and once fitted it will instantly increase the execution speed of the QL by about 4 times due to the presence of a 16MHz 68000 on board. There is 2M of fast 16 bit RAM of which QDOS sees a contiguous 1920K. The remainder is used for shadowing the QL's ROM and display memory and for the GOLD CARD's own code.

There is a disk interface which can access 3 mechanisms (4 with the DISK ADAPTER) of three different densities, DD (double density, 720K), HD (high density, 1.44M) and ED (extra high density, 3.2M) in any mix. The disk interface connector is the same type that was fitted to the Trump Card so most QL compatible disk drives can be used.

Please note: that DD drives still give a capacity of 720K per diskette.
Our DUAL ED DISK DRIVE allows the GOLD CARD to access DD, HD and ED diskettes.

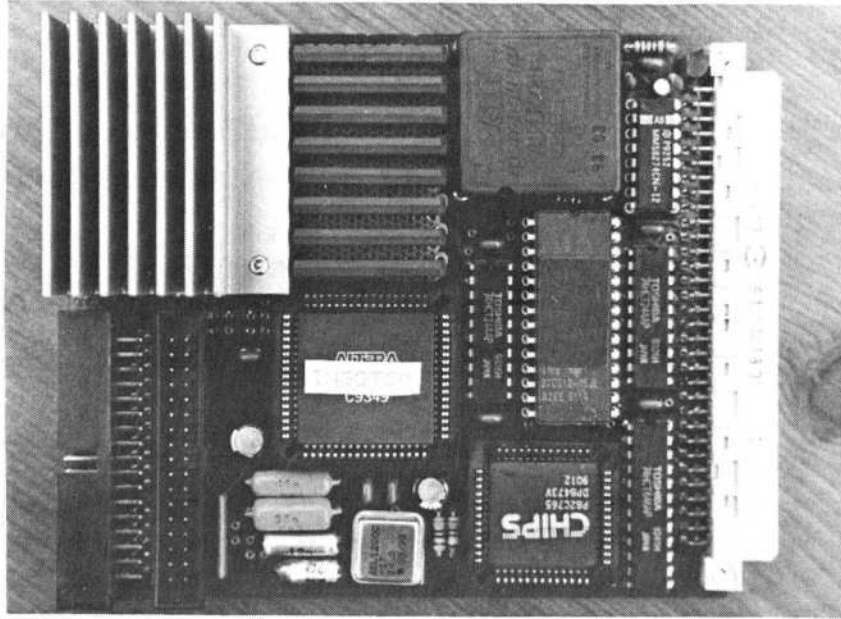
Another feature is the battery backed clock. When the QL is switched on the contents of the clock are copied into the QL's clock so that the time and date are correct. The firmware in the ROM gives the GOLD CARD all the functionality of the Trump Card like TOOLKIT II and there is a sub-directory system for floppy and RAM disks.

Physically the GOLD CARD is about half the size of the TRUMP CARD and so fits almost all within the QL. Its current consumption is well under allowable maximum so no special power supply is required. The GOLD CARD comes with a 14 day money back guarantee and a 1 year warranty.

MIRACLE SYSTEMS

SUPER GOLD CARD

"The Pathway to Future QL Development"



Briefly...

- * 3 Times Faster
- * 68020 processor
- * 4M bytes of RAM
- * CENTRONICS port
- * 2 Disk drive ports
- * 2 Year warranty
- * £375 (£325)

What is it ?

This is the first major revision of our highly successful Gold Card. We have replaced the 68000 with a 68020 so programs run about 3 times faster and have expanded the memory to 4M bytes.

Other improvements include a fast CENTRONICS printer port, 2 double disk drive ports, virtually crash-proof clock and a socket to optionally connect 5V. We also are providing a Centronics printer cable at no additional cost.

The deal...

The price is £375 inc. VAT (£325 outside EU) which covers postage, 2 year warranty and 14 day money back guarantee. We can upgrade your Gold Card for £225 (£200 outside EU), or trade in your Trump Card (£50), Super Q Board (£40), or other memory expansion (£25) against the purchase price.

Additionally, you can trade in your QL Centronics (£15) or Disk Adapter (£10) or both.

We are happy to accept payment by sterling cheque made payable to "MIRACLE SYSTEMS", or by quoting your MASTERCARD/VISA/SWITCH credit card number and expiry date (SWITCH card holders please also quote issue number).

Order From...

MIRACLE SYSTEMS LTD
20 Mow Barton
Yate, Bristol BS17 5NF
UK

Recycled Items...

Gold Card	£150
QL Centronics	£ 15
Disk Adapter	£ 10

(Recycled items carry a 1 year warranty.)

TELEPHONE/FAX: (0904) 423986

MIRACLE SYSTEMS

QXL

*See below for GOLD CARD
upgrade deal !*

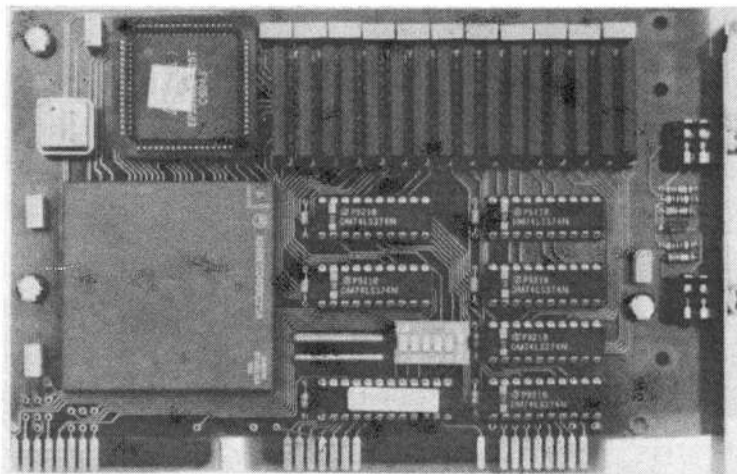
Call for other upgrade paths.

Now With

SBASIC

SuperBasic Compatible Interpreter

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UK*



- * 68EC040
- * 4M or 8M of RAM
- * Multitasking SBASIC
- * QL Network ports
- * Toolkit II
- * QDOS or MSDOS floppies
- * Uses PC's keyboard, floppy & hard disks, parallel/serial ports and mouse.

This is the card that plugs into a standard 8 or 16 bit ISA slot on a PC and allows the PC to run QL programs - FAST. A new QDOS compatible operating system from Tony Tebby called SMSQ, which is supplied on a disk, includes Toolkit II and gives you the familiar QL environment. SMSQ includes SBASIC a multitasking SuperBasic compatible interpreter.

Installation is simple; plug the QXL into a spare slot and copy 2 files from the supplied disk onto the hard drive and you're ready to go. From the DOS prompt type QXL and the PC will transform itself into a QL before your very eyes. If at any stage you wish to return to DOS just press CTRL-ScrollLock. You can later resume the QL session by typing QXL/ which takes you back to where you left off.

For POINTER ENVIRONMENT programs SMSQ can be configured to handle 3 screen resolutions in addition to the standard 512x256 QL screen. Your PC must have EGA or VGA graphics. EGA allows 640x350 whereas VGA also allows 640x480. Most SVGA cards will allow SMSQ to use 800x600 as well.

A QXL fitted with 4M bytes of RAM costs £380 including VAT (£330 outside the EU) and the 8M byte version is £495 (£430 outside the EU). Prices include postage, our 2 year warranty and a 14 day money back guarantee. Software updates are supplied free of charge and sent out automatically.

Alternatively send us your GOLD CARD plus £230 (£205 outside the EU) for a 4M byte QXL or send us your GOLD CARD and £345 (£305 outside the EU) for an 8M byte QXL.

We are happy to accept payment by sterling cheque made payable to "MIRACLE SYSTEMS", or by quoting your MASTERCARD/VISA/SWITCH credit card number and expiry date (SWITCH card holders please also quote issue number).

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